



KODAK DIGITAL SCIENCE™
8650/8650 PS Color Printer



Operator's Guide

Part No. 1H9657

Radio Frequency Interference

This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the User's Guide, this energy may cause interference to radio and television reception.

This equipment has been type tested and found to comply with the following:

This device meets FCC Class B emission limits for verification pursuant to Part 15 of the Federal Communications Commission Rule of the United States.

"The class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications."

"Cet appareil numérique respecte les limites de bruits radiolétriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur : "Appareils Numériques", NMB-003 édicté par le ministre des Communications."

- 47CFR Part 15 SubPart B (North American - USA) - Class B or "meets Class B limits for verification"
- ICES-003 (North American - Canada) - Class B
- VCCI-2 (Japan) - Class B

この装置は、第二種情報処理装置（住宅地域又はその隣接した地域において使用されるべき情報処理装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

This equipment is in the 2nd class category (information equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council For Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential areas. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

Requirements of the EMC directive 89/336/EEC were met through compliance with the following:

- EN50081-1 (European - EU) consists of: EN55022 (class B)
- EN50082-1 (European - EU) consists of: IEC 801 - 2/91 (ESD)
IEC 801 - 3/84
(rf immunity)
IEC 801 - 4/88 (EFT)

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

Regulatory Information

The foregoing limits are designed to provide reasonable protection against harmful interference when operated in a residential installation. However, there is no guarantee that interference will not occur in a particular location. If this equipment does cause interference to radio or television reception (determined by turning the equipment off and on), you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Relocate the printer with respect to the receiver
- Move the printer away from the receiver
- Plug the printer into a different outlet so that the receiver and printer are on different branch circuits

If problems persist, consult an experienced radio/television technician for additional suggestions. You may also find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet can be purchased by contacting the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Important

This equipment was tested using shielded interface cables. The use of these cables is required to reduce the possibility of causing interference to radio and television reception.

Das Gerät ist gemäß Amtsblattberfügung 243/91 funkenstört und wurde der Deutschen Bundespost gemeldet. Kodak AG, Stuttgart.

DIESES GERÄT WURDE SOWOHL EINZELN ALS IN EINER ANLAGE, DIE EINEN NORMALEN ANWENDUNGSFALL NACHBILDET, AUF DIE EINHALTUNG DER FUNKENTSTÖRBESTIMMUNGEN GEPRÜFT. ES IST JEDOCH MÖGLICH, DASS DIE FUNKENTSTÖRBESTIMMUNGEN UNTER UNGÜNSTIGEN UMSTÄNDEN BEI ANDEREN GERÄTEKOMBINATIONEN NICHT EINGEHALTEN WERDEN. DER BETREIBER IST FÜR DIE EINHALTUNG DER FUNKENTSTÖRUNGS BESTIMMUNGEN SEINER GESAMTEN ANLAGE VERANTWORTLICH, IN DER DIESES GERÄT BETRIEBEN WIRD.

This equipment has been tested and found to comply with the following:

UL 1950
CSA 950
TUV EN60950

Safety Regulations

The following symbol has been placed on areas of the printer where electrical shock is possible. Take extra precautions in these areas.



Table of contents

About this guide	i
Using this guide	i
About the other guides included with the printer	ii
Getting help or additional information	iii
Introduction	1-1
About printer memory	1-1
Media and image size	1-2
Interfaces	1-3
Printer drivers and export modules	1-4
Fonts	1-5
Resident fonts	1-5
Setting up the printer	2-1
Finding a location for the printer	2-2
Unpacking the printer	2-3
Cleaning the print head	2-5
Loading the ribbon	2-8
Handling the ribbon	2-8
Storing the ribbon	2-8
Loading ribbon in the printer	2-9
Unpacking and adjusting the paper tray	2-12
Working with media	2-12
Storing media	2-12
Paper and humidity	2-12
Loading media	2-14
Putting the dust cover on	2-17
Connecting the cables	2-18

Connecting a parallel cable	2-19
Connecting a LocalTalk cable	2-19
Connecting a SCSI cable	2-20
Connecting the power cord	2-22
Checking and changing printer settings	2-23
Changing the operating mode	2-23
Changing the media settings	2-24
About printer initialization	2-26
If the printer does not initialize itself	2-26
Making a test print	2-27
What's next	2-27

Operating the printer 3-1

Looking at the display panel	3-2
Working with the printer settings	3-4
Working in Setup mode	3-6
About specifying port information	3-6
Working with media	3-8
Printing from computer applications	3-15
Scheduling jobs	3-16
Handling and storing prints and transparencies	3-17
Cleaning the printer	3-18
Keeping the printer in good working order	3-19
Working with the printer	3-19

Troubleshooting the printer 4-1

Error messages and how to resolve them	4-2
When mismatches occur	4-8
Ribbon type mismatch	4-8
Receiver type mismatch	4-8
Receiver size mismatch	4-8
If the printer is not operating correctly	4-9

Clearing the paper path	4-11
Cleaning the pick rollers	4-14
Cleaning the sensors	4-16
Repacking the printer	4-17
Getting additional help	4-19
Appendix A Printer specifications/site requirements	A-1
Printer specifications	A-1
Space requirements	A-1
Operating environment	A-2
Power requirements	A-2
Appendix B Accessories and supplies	B-1
Accessories	B-1
Supplies	B-1
Ribbons	B-2
Paper	B-3
Transparency material	B-4
Appendix C Customizing the printer	C-1
Adding an external hard drive	C-2
Installing the hard drive	C-2
Initializing the hard drive	C-3
Downloading additional fonts to the hard drive	C-5
Adding memory to the printer	C-8
Preparing to install a SIMM	C-8
Installing the SIMM card	C-12
Finishing up	C-13

Index

About this guide

The guide provides the information you need to set up, operate, maintain, and troubleshoot the *KODAK DIGITAL SCIENCE™* 8650/8650 PS Color Printer.

This guide is intended for owners and operators of the *KODAK DIGITAL SCIENCE* 8650/8650 PS Printer.

Using this guide

This guide is organized as follows:

- | | |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chapter 1 | Introduction —describes the printer and the different memory configurations of the printer. Talks about resident and non-resident fonts. |
| Chapter 2 | Setting up the printer —explains how to unpack and set up the printer and how to get it ready to use. Also tells how to handle, store and load ribbon and media, and how to clean the printer (includes how to clean the thermal print head). |
| Chapter 3 | Operating the printer —tells how to use the display panel, how to work with the printer settings, and how to handle and store finished prints and transparencies. |
| Chapter 4 | Troubleshooting the printer —describes and tells how to handle error and print mismatch messages. Provides solutions to common operational problems and explains how to clear the paper path. Lists where to go for additional help. |

- Appendix A **Printer and site specifications**—lists printer specifications and the site specifications
- Appendix B **Accessories and supplies**—lists accessories and supplies for the printer, and tells how to order them.
- Appendix C **Customizing the printer**—tells how to enhance the operation of the printer by connecting an external hard drive and by adding additional memory.

About the other guides included with the printer

The other guides included with the printer are—

- *KODAK DIGITAL SCIENCE 8650 PS Color Printer Driver User's Guide*—provides information about setting up and using the ADOBE® PostScript™ Driver with PCs running Microsoft WINDOWS 3.1, PCs running WINDOWS 95, and Macintosh computers. Also provides color management information and application-related information.
- *KODAK DIGITAL SCIENCE 8650 Color Printer Export Module for ADOBE PHOTOSHOP User's Guide*—provides information about installing and using the export modules for the 8650 Printer with PCs running Microsoft WINDOWS 3.1, PCs running WINDOWS 95, and Macintosh computers.

Getting help or additional information

Your Kodak dealer is the best source for information about setting up, operating, and obtaining accessories and supplies for your printer. Please contact your dealer with any questions you have.

Dealer Name _____
Dealer Telephone Number _____

In addition, for technical support see Kodak's web site at www.kodak.com or call 1-800-23KODAK (1-800-235-6325) between 9:00 a.m. and 8:00 p.m. Eastern Standard Time on regular business days. Contact this number for

- help setting up or operating the printer
- where to obtain supplies
- where to obtain service
- information about software/printer interaction
- warranty information
- information about other Kodak products

The FAX back number for product literature is 1-800-508-1531. You may call this number 7 days a week, 24 hours a day.

1 Introduction

Thank you for purchasing the *KODAK Digital Science* 8650/8650 PS Color Printer.

The *KODAK Digital Science* 8650 Printer operates only in raster mode. The 8650 PS Printer is a PostScript language printer that also operates in raster mode. You can purchase an upgrade kit for the 8650 Printer that allows it to operate in both raster and PostScript modes.

The 8650/8650 PS Color Printer is a thermal dye diffusion device with superior printing speed. It contains a 33 MHz MIPS RISC processor, has a resolution of 300 dots per inch (DPI), and prints a three or four-color page in about 75 seconds. Printed images are high-contrast and long lasting. KODAK EKTATHERM XTRALIFE Ribbon (available with 3-color ribbon) can be used to protect images from fingerprints.

About printer memory

You can purchase the 8650/8650 PS Printer with 32 MB or 48 MB of memory. You can add memory to the printer to a maximum of 64 MB.

If your printer has 32 MB of memory, you can print all image sizes for three-color or black ribbons. You cannot, however, print CMYK images with 4-color ribbon. In addition, your ability to process one job while printing another is limited.

If your printer has 48 MB of memory, you can print all image sizes for all ribbons. With 48 MB of memory, you can process one job at the same time you are printing another while you are using 12-inch ribbon.

If your printer has 64 MB of memory, you can process and print jobs of all sizes at the same time.

Media and image size

The printer can print on the following sizes and types of KODAK EKTATHERM XLS Print Paper and on the following sizes of KODAK EKTATHERM XLS Transparency Material.

See Chapter 3 for illustrations of the maximum image size for each.

Paper/Transparency size	Maximum image size
8.5 x 11 (216 x 279 mm) - A paper (photographic grade) and transparency material	8 x 8.93 (204 x 228 mm)
8.27 x 11.69 (210 x 297 mm) - A4 paper (photographic grade) and transparency material	8.0 x 9.6 (204 x 246 mm)
8.5 x 12 (216 x 307 mm) - A (long) paper (photographic grade) and transparency material	8 x 10 (204 x 256 mm)
8.27 x 12 (210 x 307 mm) - A4 (long) paper (photographic grade) and transparency material	8 x 10 (204 x 256 mm)
8.5 x 14 (216 x 358 mm) - A (xlong) paper (photographic grade) and transparency material	8 x 12 (204 x 307 mm)
8.27 x 14 (210 x 358 mm) - A4 (xlong) paper (photographic grade) and transparency material	8 x 12 (204 x 307 mm)
9.5 x 14 (243 x 358 mm) - paper only —Photographic grade —Commercial grade —Publication grade	Raster mode: 8.5 x 12 (217 x 307 mm) PostScript mode: 8.5 x 12 (217 x 307 mm)

Interfaces

Standard communication ports are provided. In addition, the optional KODAK Network Interface Card lets you tie your printer into networks using Ethernet cabling.

The following interfaces are provided with the printer.

Interface Type	Printer Mode
Centronics Parallel	Raster and PostScript
LocalTalk	PostScript only
SCSI	Raster only

The following 16 MB Ethernet interfaces are provided by the Network Interface Card.

Interface Type	Version	Printer Mode
EtherTalk	Phase 1 and Phase 2	Raster and PostScript
Novell NetWare	The following versions of Novell NetWare for Clients: NetX, VLM, and MSIPX.	Raster and PostScript
TCP/IP	lpr	Raster and PostScript

Printer drivers and export modules

The printer drivers and export modules developed for the 8650/8650 PS Printer are based on high-quality Kodak photographic printing methods. The color-rendering processes that evolved are highly sophisticated. Using the drivers and export modules will allow you to access advanced printing options based on Kodak color science.

The following printer drivers are provided for printers operating in PostScript mode. For information about installing and using the drivers, refer to the Printer Driver *User's Guide*.

- **KODAK DIGITAL SCIENCE™** 8650 PS PostScript Driver for WINDOWS 3.1
- **KODAK DIGITAL SCIENCE™** 8650 PS RGB PostScript Driver for WINDOWS 95
- **KODAK DIGITAL SCIENCE™** 8650 PS CMYK PostScript Driver for WINDOWS 95
- **KODAK DIGITAL SCIENCE™** 8650 PS Color Printer Driver for MACINTOSH Computers

The following export modules are provided for printers operating in raster mode. For information about installing and using the export modules, refer to the Export Module *User's Guide*.

- **KODAK DIGITAL SCIENCE** 8650 Export Module for ADOBE PHOTOSHOP and WINDOWS 3.1
- **KODAK DIGITAL SCIENCE** 8650 Export Module for ADOBE PHOTOSHOP and WINDOWS 95
- **KODAK DIGITAL SCIENCE** 8650 Export Module for ADOBE PHOTOSHOP and MACINTOSH Computers

Additional printer drivers are available through third party developers. For third party products, refer to the *KODAK Third Party Digital Imaging Solutions Catalog* on the Kodak Web site at <http://www.kodak.com>. Search on solutions catalog.

Fonts

Thirty-five screen fonts are resident on PostScript versions of the printer. You can also connect an external hard drive to the printer for font storage. See Appendix C for more information.

Resident fonts

The following fonts are resident on PostScript versions of the printer.

- Courier, Courier Oblique, Bold, Bold Oblique
- Helvetica, Helvetica Oblique, Bold, Bold Oblique
- Times Roman, Times Italic, Bold, Bold Italic
- Helvetica Narrow, Narrow Oblique, Narrow Bold, Narrow Bold Oblique
- ITC Avant Garde Gothic Book, Book Oblique, Demi, Demi Oblique
- ITC Bookman Light, Light Italic, Demi, Demi Italic
- ITC Zapf Chancery Medium Italic
- ITC Zapf Dingbats
- New Century Schoolbook Roman, Italic, Bold, Bold Italic
- Palatino Roman, Italic, Bold, Bold Italic
- Symbol

2 *Setting up the printer*

This chapter explains how to set up the *KODAK DIGITAL SCIENCE* 8650/8650 PS Color Printer. These steps are:

- Finding an appropriate location for the printer
- Unpacking the printer
- Removing the shipping tape and shipping pins
- Cleaning the print head
- Loading ribbon
- Unpacking and adjusting the paper tray
- Connecting the interface cables
- Connecting the power cord and turning the printer on
- Checking and changing the printer settings

The printer drivers and export module that enable you to take full advantage of the printer's capabilities are on the CD-ROM shipped with the printer. After you set up the printer and before you use it, you should install the printer drivers and the export module.

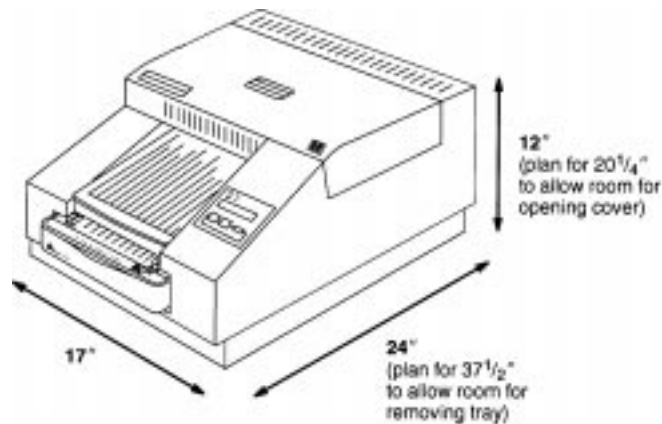
This chapter does *not* explain how to install the printer drivers or the export module. For this information, refer to the user's guide for the export module or the printer driver.

Finding a location for the printer

As you look for an appropriate location for the printer, keep the following guidelines in mind. Refer to Appendix A for site requirements.

- Allow two inches (about 5 cm) on all sides of the printer for easy access.
- Place the printer so that air flow is not blocked.
- Airborne dirt particles can cause image quality problems. Avoid placing the printer in areas where ventilation ducts, open doors, or frequent passers-by might expose the printer and media to high levels of debris.

The space requirements for the printer are shown below.



Unpacking the printer

The following items are included with the printer. If any are missing, contact your place of purchase.

- Paper tray
- Power cords (3)
- Plastic dust cover
- Universal language kit with:
 - 4 thermal head cleaning pads
 - SCSI terminator
 - Picker roller cleaning kit (includes 10 water pads)
 - Protective overnight cover (blue)
 - Set of user's guides— Operator's Guide, Printer Driver Guide, and Export Module Guide—printed in English.
 - CD ROM containing user's guides in Spanish, French, German, and English in ADOBE Acrobat (PDF) format. Contains ADOBE Acrobat software for accessing, viewing, and printing the guides. The CD ROM also contains the printer drivers and export module. The user interface for the printer drivers is in English only. The user interface for the export module is in English, Spanish, French, and German. In addition, the CD ROM has color management profiles and software from EFI and PANTONE and two International Color Consortium (ICC) profiles—one for 3-color ribbon and one for 4-color ribbon.

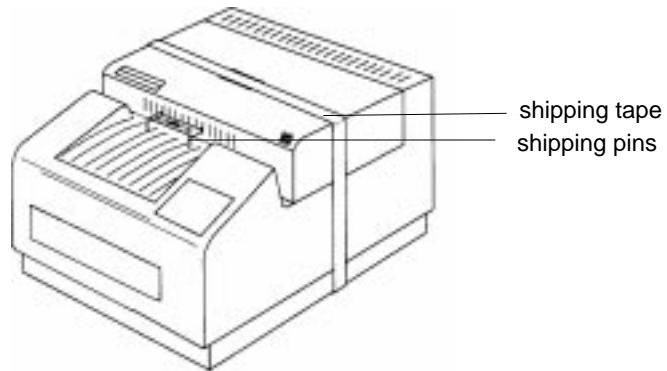
To unpack the printer:

1. Remove the printer from the shipping carton.

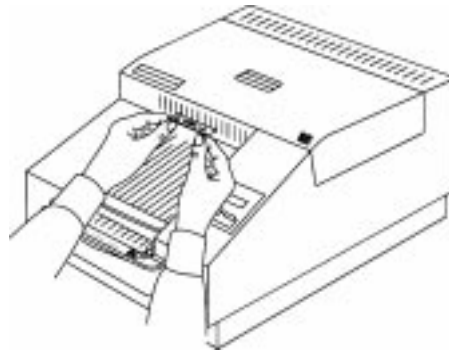
CAUTION: The printer is heavy. We recommend that two people lift and carry it.

2. Remove the printer from the plastic bag.

3. Remove the shipping tape from the printer cover.



4. Carefully pull out the shipping pins.



CAUTION: Remove the shipping pins before you use the printer.

IMPORTANT: *Save the packaging and the shipping pins in case you need to ship the printer.*

Cleaning the print head

To avoid lines or streaks in your prints, clean the print head before using it for the first time and whenever you replace the ribbon. If your site is particularly dusty, you may need to clean the head more often.

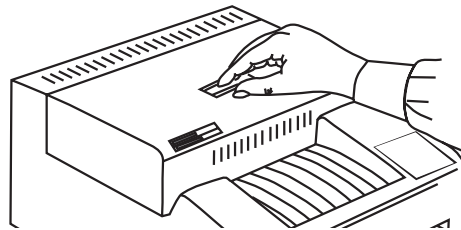
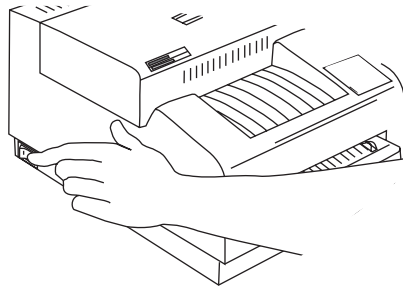
Cleaning pads come with each ribbon spool.

CAUTION: Always use the cleaning pad provided with the ribbon spool.

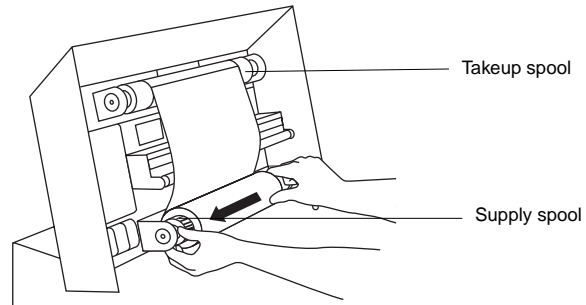
Never rub or wipe anything across the thermal head except when cleaning it.

To clean the print head:

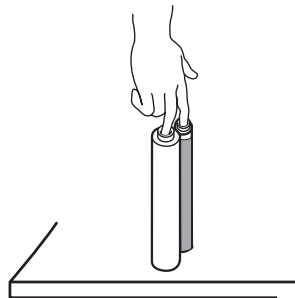
1. Make sure the printer is turned off and open the cover.



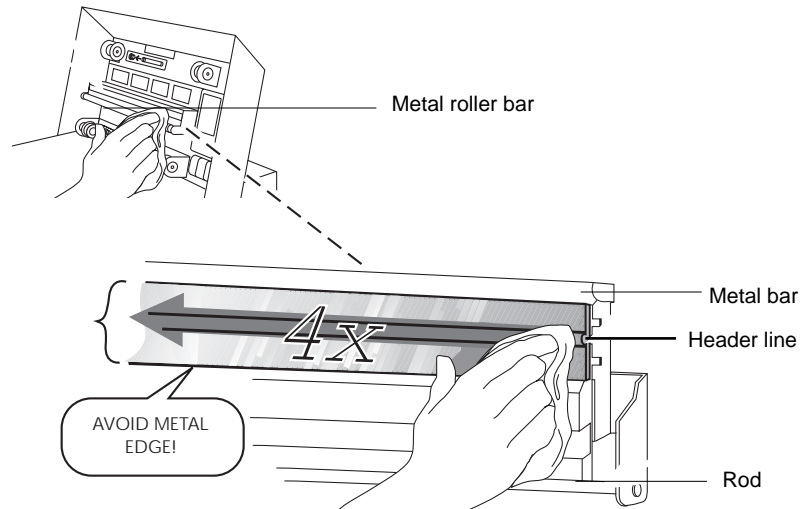
2. Remove the supply spool and wrap it tightly upward. Then remove the take-up spool. **DO NOT** touch the ribbon.



3. Remove both spools and stand them upright on a freshly cleaned surface.



4. To clean the print head, first use the water pad and then use the alcohol pad. With each pad, wipe along the heater line four times as follows:
 - Wipe the full length of the glass area (always in one direction).
 - Use a clean part of the pad for each wipe.
 - Apply firm, even pressure.
 - Wipe the metal roller bar and rod as shown.



5. Allow the glass area to dry for about two minutes.
6. Do one of the following:
 - If reloading the ribbon*, load the supply spool first (with the bar code on the left. If the ribbon gets dirty or is damaged, wind the take-up spool ahead to the next clean magenta section.
 - If loading a new ribbon*, refer to the instructions on the ribbon package.
7. Close the printer cover, and turn the printer *On*.

Loading the ribbon

The **ribbon** provides dyes for printing images.

Three-color ribbon contains three dye patches: yellow, magenta, and cyan. Each three-color ribbon, except the three-color, oversize, extra-life ribbon, contains enough dye to make 100 prints. The three-color, oversize, extra-life ribbon contains enough dye to make 85 prints.

Four-color ribbon contains four dye patches: yellow, magenta, cyan, and black. Each four-color ribbon contains enough dye to make 85 prints.

Black ribbon contains only black dye patches. Each black ribbon contains enough dye to make 150 prints.

KODAK EKTATHERM XLS Three-Color Ribbon / XTRALIFE Media and KODAK EKTATHERM XLS Black Ribbon / XTRALIFE Media contain additional patches that protect images from fingerprints.

Handling the ribbon

Handle ribbon as follows.

- Hold the ribbon spools by the ends to avoid fingerprints. Fingerprints on the ribbon web severely reduce image quality.
- Wear lint free gloves when working with ribbon.
- Do not expose the ribbon to direct sunlight, extreme heat, dust, or liquids.
- Leave the printer cover closed except when you need to access the inside of the printer.

Storing the ribbon

For highest image quality, store ribbon as follows. See the instructions on the package for more storage information.

- Store unopened ribbon at temperatures below 77°F (25°C). Avoid exposure to temperatures higher than 100°F (38°C).
- Wrap partially used ribbons in their original wrappers to protect them from dust and dirt when they are not in the printer. Dust and dirt specs on the ribbon show up as much larger spots on prints.

Loading ribbon in the printer

The ribbon fits easily in the printer. There is only one way to correctly place the spools.

Follow these steps to load a ribbon:

IMPORTANT: Hold the ribbon spools by the ends to avoid fingerprints. Also, wear lint-free gloves when handling ribbon spools.

1. Remove the old ribbon spools and dispose of them.

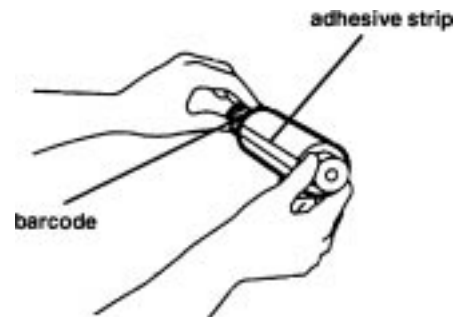
NOTE: Images remain on the ribbon after printing. If you are working with confidential documents, you may, to maintain security, need to consider alternate ways of disposing of the ribbon.

2. Clean the print head. See page 2-5 for instructions.

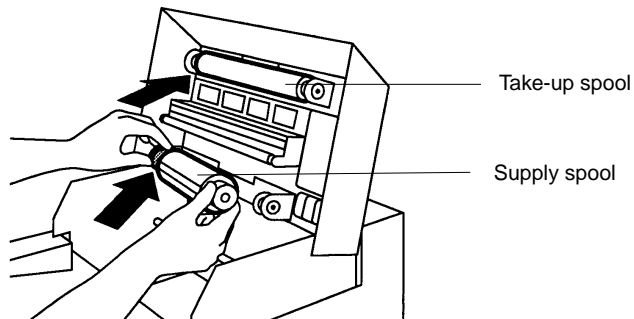
3. Remove the new ribbon spools from the box.

The supply spool is longer than the take-up spool. For new ribbons, the supply spool will be loaded with ribbon and the take-up spool will be empty.

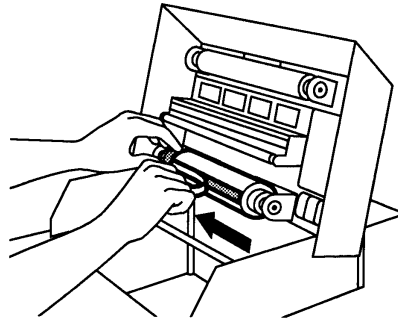
4. Push the left side of the take-up spool into the left side of the top spool holder (the holders are spring-loaded).
5. Match the notches in the take-up spool with the notches on the right spool holder.
6. Insert the right side of the take-up spool into the holder on the right.
7. Hold the supply spool so that the adhesive strip on the ribbon is facing you and the barcode is on the left. Make sure, especially when you are reloading a partially used spool, that the spool notches are on the right.



8. Push the left side of the supply spool into the left side of the bottom spool holder (the holders are spring loaded).

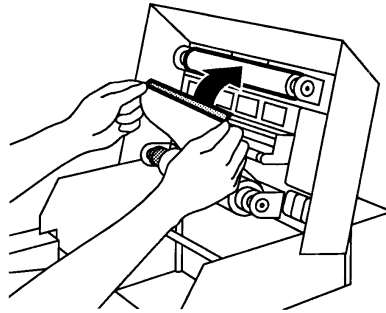


9. Match the notches in the supply spool with the notches on the right spool holder.
10. Insert the right side of the supply spool into the holder on the right.
11. Remove the tape from the adhesive strip



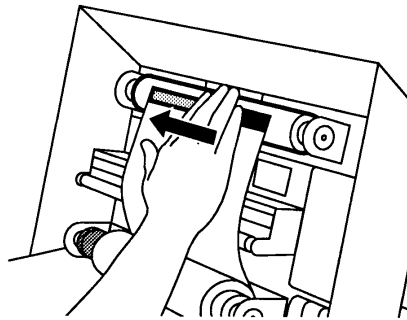
12. Hold any excess ribbon behind the adhesive strip.

13. Pull the ribbon up carefully and stick the adhesive onto the takeup spool.



NOTE: Keep the ribbon as straight as possible.

14. Smooth the ribbon over the adhesive strip.



15. Wind the take-up spool **away from you** several times. The first full set of dye patches is not used for printing.
16. Close the printer cover.

Unpacking and adjusting the paper tray

Working with media

When working with paper and transparencies, follow these guidelines:

- Hold paper by the edges to avoid fingerprints, which reduce print quality.
- Handle the package of paper with the cardboard stiffener sheets in place.
- Keep the bottom stiffener board in place when handling stacks of paper to avoid fingerprints on the printing surface.
- Do not use wet or damaged stock.
- Keep the lid on the paper tray and the paper tray inserted in the printer to protect media from exposure to light, dust or dirt.

Storing media

For highest image quality, follow these storage instructions:

- Store opened paper and transparencies at temperatures below 77°F (25°C). Avoid exposure to temperatures higher than 100°F (38°C).
- Avoid storing loose stacks of media out of its wrapper.

Paper and humidity

Paper is adversely affected by extremes in relative humidity. High relative humidity tends to cause paper to curl toward the image side of the paper. Low relative humidity tends to cause paper to curl away from the image side of the paper. Low relative humidity also tends to increase static attraction of dust and dirt.

To avoid humidity-related problems, make sure the environment in which you use and store paper is between 40% and 60% relative humidity. Relative humidity lower than 20% or higher than 76% should be avoided even for short periods of time. Print paper can tolerate a relative humidity between 20% and 40%, and between 60% and 76%, for up to a few hours without causing the paper to curl.

Handling humidity–related paper problems

If paper is exposed to humidity levels outside the recommended range, take extra care to help protect it as follows.

- Load small amounts of paper rather than a whole package. Paper stored in the wrapper lasts longer.
- Wrap partial stacks of paper in its original plastic wrap, squeeze out the air, and tape the wrap shut. This will protect the paper from humidity, as well as from dust and dirt. Specs of dust and dirt on paper show up as much larger spots on prints.
- Avoid leaving paper in the printer overnight or on weekends.

If the problems persist, consider installing a humidifier or dehumidifier to bring the humidity at your site to within the acceptable range.

Loading media

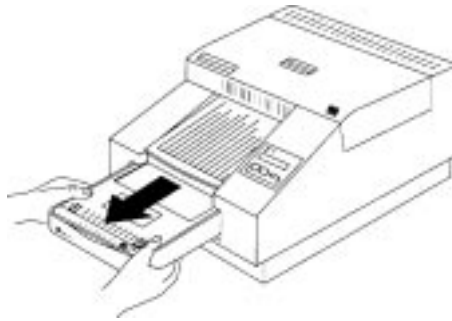
Thermal media—paper and transparencies—comes in various sizes. See Chapter 3 in this guide for complete information about types and sizes of media

The paper tray adjusts to the size of the paper you want to load. Do not force media that is too long or wide into the tray.

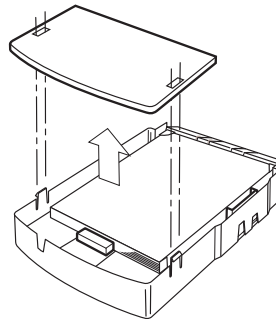
IMPORTANT: *Use only trays designed for the DIGITAL SCIENCE 8650/8650 PS Color Printer. Using other trays may cause paper jams, especially when you are printing images that do not take up the maximum image area of the receiver.*

Contact your dealer for trays in a size other than the one supplied with the printer. See "Appendix B Accessories and supplies" for catalog numbers.

1. Remove the paper tray.

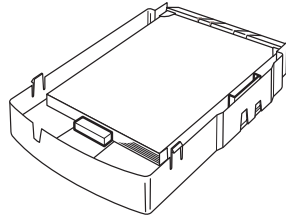


2. Press and hold the tabs that come through the top of the lid, then remove the lid.

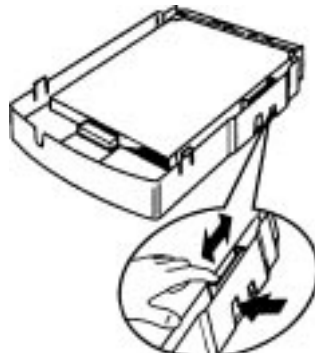


3. Make sure the paper size settings on the tray match, and that they are correct for the media you are going to load. If necessary, adjust the settings as follows:

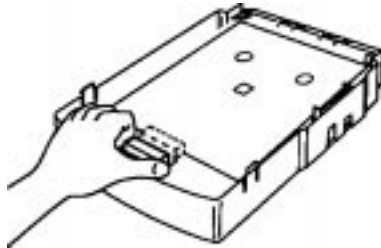
- Look through the opening on the side of the tray at the sensor label. This label shows the current paper size setting.



- Move the media-length slider on the inside of the tray until the desired size appears in the opening.



- Make sure the tabs in the media-length stop (the piece that fits against the installed media) are inserted in the correct slots on the bottom of the tray. For example, if you set the sensor slider at 8.5 x 12, insert the tabs in the 8.5 x 12 slots.

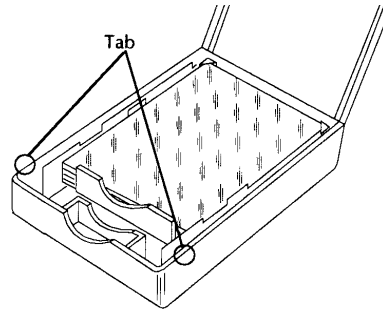


4. Remove the media from the package. Leave the blue stiffener sheet on the bottom of the stack in place.

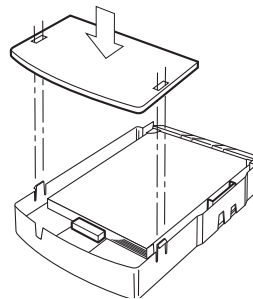
IMPORTANT: *Handle paper by the edges to avoid fingerprints on the top sheet.*

5. *If loading paper*, place the paper, logo side up, in the tray.
If loading transparencies, place the stack into the tray with the orientation notch on the lower right-hand side and the blue stiffener sheet on the bottom.

Make sure the front corners of the stack are under the triangular metal tabs.



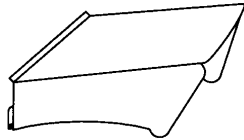
6. Put the lid back on.



7. Make sure the latches on the sides of the tray lock into place in the lid. Then slide the tray into the printer until it locks into place.
8. Verify that the correct media size appears in the display panel.

Putting the dust cover on

To help prevent dirt-related problems, keep the plastic dust cover in place when you are using the printer.

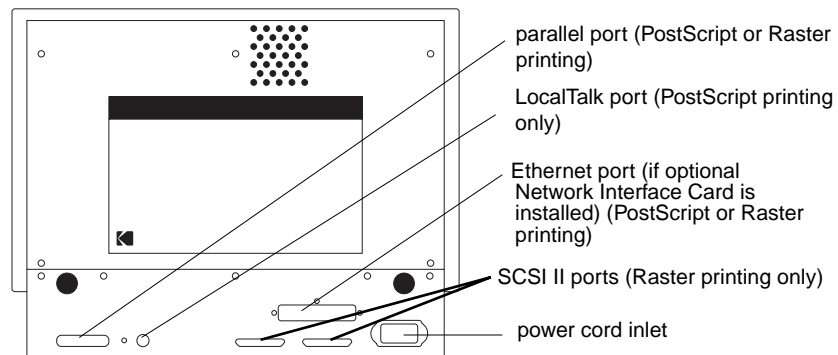


Attach the dust cover to the printer in the first slot from the left and the second slot from the right.

Connecting the cables

You must provide the necessary interface cables. Three power cords (North America/Japan, Europe Continental, and Australia) are included. If you will be using the printer outside these areas, you may need to purchase a power cord.

Standard communication ports are provided. Which ones are active depends on whether you have the 8650 Color Printer or the 8650 PS Color Printer. Ethernet ports will be in place if the optional Network Interface Card is installed.



The **Centronics (Female) parallel port** can be used for printing when the printer is in PostScript or raster mode.

The **Mini Din 9-pin (Female) LocalTalk port** can be used for printing when the printer is in PostScript mode.

The **Submini 50-pin (Female) SCSI II ports** can be used for printing when the printer is in raster mode, and for SCSI disk drive connections when the printer is in PostScript mode. A 50-pin submini SCSI II terminator is included with the printer.

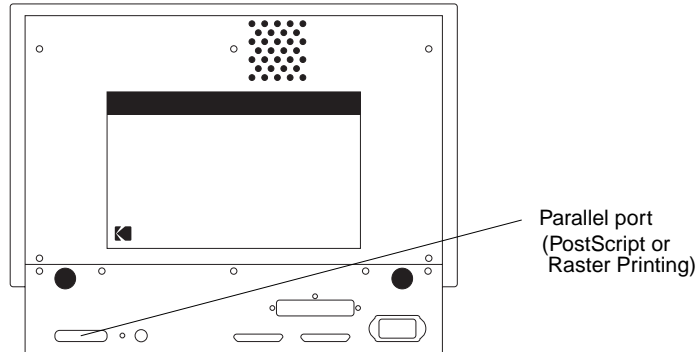
Ethernet 10BaseT (RJ45) and 10Base2 (BNC) ports are active in both PostScript and raster mode if the optional Network Interface Card is installed.

If the optional Network Interface Card is installed, Ethernet cabling is used. Refer to the Installation and Setup Guide for the *KODAK Network Interface Card*.

Connecting a parallel cable

To attach a parallel (Centronics) cable:

1. Make sure the computer is turned *On* and the printer is turned *Off*.
2. Connect the Centronics end (no pins) of the cable to the printer's parallel port.



3. Connect the 25-pin end of the cable to the computer's parallel port.
4. Connect the power cord. See "Connecting the power cord" on page 2-22.
5. Turn the printer *On* (press the power switch on the side of the printer to |).

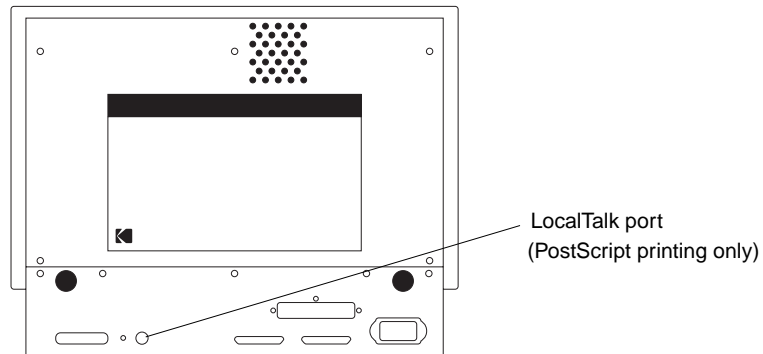
Connecting a LocalTalk cable

You need two LocalTalk connectors and a LocalTalk cable. Do as follows to connect the computer and printer using LocalTalk cable:

1. Make sure the computer is turned *On* and the printer is turned *Off*.
2. Attach one LocalTalk connector to the computer's LocalTalk port. Attach the other connector to the printer's LocalTalk port.

NOTE: If you are already on a LocalTalk network, you may not need

two connectors.



3. Connect the LocalTalk cable to the two connectors.
4. Connect the power cord. See "Connecting the power cord" on page 2-22.
5. Turn the printer *On* (press the power switch on the side of the printer to |).

IMPORTANT: The printer can initialize itself only if the computer is On.

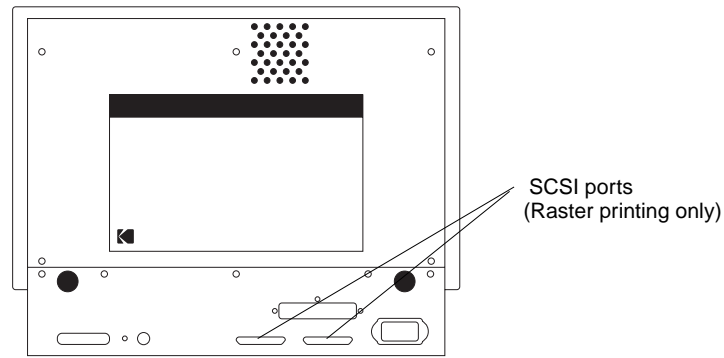
Connecting a SCSI cable

The SCSI connection is active only when the printer is operating in raster mode. The default SCSI ID for the printer is 5.

To connect a SCSI cable:

1. Make sure that both the printer and the computer are turned *Off*.
2. The default SCSI ID is 5. To change the SCSI ID see "About specifying port information" on page 3-6.

3. Connect and secure the SCSI cable to one of the printer's SCSI ports.



4. Connect and secure the SCSI terminator to the open SCSI port (or to the last device when daisy-chaining multiple devices.)

NOTE: If you are connecting the printer to a Macintosh IIx computer, a special Macintosh IIx terminator is required. Obtain this terminator from an Apple retailer.

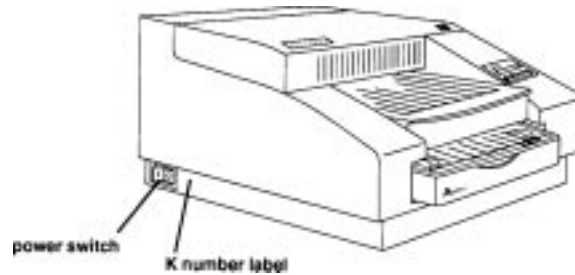
5. Connect the power cord. See "Connecting the power cord" on page 2-22.
6. Turn the printer *On* (press the power switch on the side of the printer to |). When READY appears on the printer display panel, turn the computer *On*.

Connecting the power cord

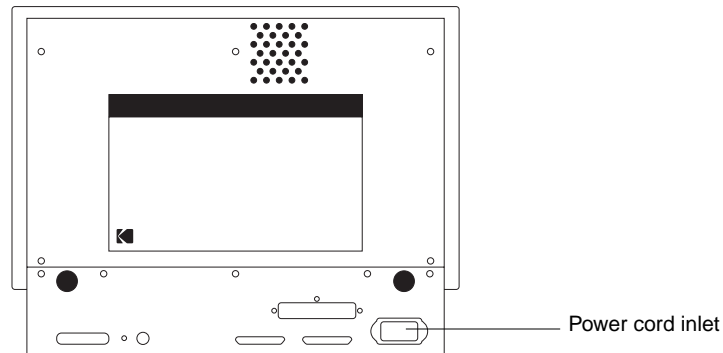
The printer automatically accepts input voltages from 90 to 250V and frequencies from 47 to 60 Hz.

To attach the power cord:

1. Make sure that the power switch is set to *Off*.



2. Plug one end of the power cord into the inlet on the back of the printer. Plug the other end into an AC outlet.

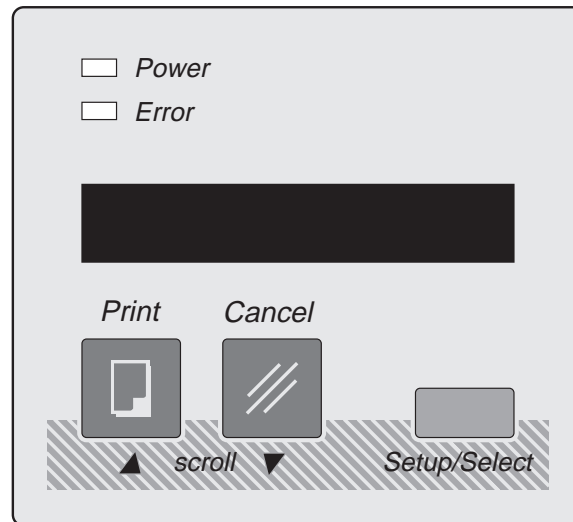


Checking and changing printer settings

Before you make a test print—the last step in setting up the printer—check that the printer settings are correct for the media you just loaded and for the mode in which you are going to operate the printer.

This section describes only how to check and set the mode and media options. For complete information about printer settings, see Chapter 3 in this guide.

You use the buttons on the printer's display panel (shown below) to look at and change the printer settings.



Changing the operating mode

If you have the PostScript version of the printer, the printer has two operating modes: PostScript and raster. The PostScript mode is the factory default.

To change the mode to raster:

1. Press Setup/Select when READY appears in the display panel.
2. Press Print to scroll down (or Cancel to scroll up) through the settings until SETUP:MODE appears.
3. Press Setup/Select to access the MODE options.

The default mode, PostScript, will have an asterisk (*) next to it. The asterisk indicates which option is selected.

4. Press Cancel until MODE:RASTER appears.
5. Press Setup/Select to choose raster mode.
6. Press Cancel until MODE:EXIT appears.
7. Press Setup/Select to exit MODE.
8. Press Cancel until SETUP:EXIT appears.
9. Press Setup/Select to exit Setup mode.

After you change the mode, the printer reinitializes itself. When the printer is operational, it will be running in raster mode. READY: RASTER will appear in the display panel.

Changing the media settings

Changing the media type

The printer has three media type settings: Paper, Transparency, and Draft. (The faster draft setting lets you proof your transparencies.) Paper is the factory default.

If you loaded transparencies in the paper tray, we recommend you change the media type to transparency. To do so:

1. Press Setup/Select when READY appears in the LCD message area.
2. Press Print to scroll down (or Cancel to scroll up) through the settings until SETUP:DEFAULTS appears.
3. Press Setup/Select to access the DEFAULTS options.
4. Press Setup/Select to access the DEFAULTS: MEDIA options.
5. Press Cancel until MEDIA:TYPE appears.
6. Press Setup/Select to access the MEDIA TYPE options.

The default media type, PAPER, will have an asterisk (*) next to it. The asterisk indicates which option is selected.

7. Press Cancel until the desired media type—TRANSPARENCY or DRAFT—appears.
8. Press Setup/Select to choose the desired media type.
9. Press Cancel until TYPE:EXIT appears.
10. Press Setup/Select to exit MEDIA TYPE.
11. Press Cancel until DEFAULTS:EXIT appears.

12. Press Setup/Select to exit Setup mode.

The just-selected option is effective as soon as you exit Setup mode.

Changing the paper color

You can print onto three paper colors: Photographic, Commercial, and Publication. Photographic, which represents standard white stock, is the factory default.

If you load Commercial or Publication paper in the paper tray, you need to change the MEDIA: COLOR option. To do so:

1. Press Setup/Select when READY appears in the LCD message area.
2. Press Print to scroll down (or Cancel to scroll up) through the settings until SETUP:DEFAULTS appears.
3. Press Setup/Select to access the DEFAULTS options.
4. Press Cancel until MEDIA:COLOR appears.
5. Press Setup/Select to access the MEDIA COLOR options.
6. Press Cancel until the desired media type—COM. or PUB.—appears.

The default media type, STANDARD, will have an asterisk (*) next to it. The asterisk indicates which option is selected.

7. Press Setup/Select to choose the desired media type.
8. Press Cancel until COLOR:EXIT appears.
9. Press Setup/Select to exit MEDIA COLOR.
10. Press Cancel until DEFAULTS:EXIT appears.
11. Press Setup/Select to exit DEFAULTS mode.
12. Press Cancel until SETUP:EXIT appears.
13. Press Setup/Select to exit Setup mode.

The just-selected option is effective as soon as you exit Setup mode.

About printer initialization

When you turn the printer on, it takes up to a minute for the printer to initialize itself (start up and perform a self check). During this time, the power light on the display panel illuminates, and the messages below alternate on the display panel:

INITIALIZING*

INITIALIZING**

PLEASE WAIT

When the printer is ready, the following message appears on the display panel.

READY-POSTSCRIPT

or

READY-RASTER

If the printer does not initialize itself

If the printer fails to initialize itself, the message INIT ERROR appears on the panel. Turn the printer *Off* and then back *On*.

If the INIT ERROR message appears again, turn off both the printer and the computer. Disconnect all cables from the printer except the power cable. Turn on the printer. If the INIT ERROR message appears again, call for service.

If the INIT ERROR message is cleared, then the problem could be in the cable connections. Making a test print

Finally, make a test print. Doing so helps you verify proper printer setup and operation, and confirms print quality. There are two test images: one is generated in raster mode, the other in PostScript mode.

To make a test print:

1. Make sure that READY appears on the display panel.
2. Press Print on the display panel.

It takes less than two minutes to make a test print. While the image is being processed and printed, the messages PROCESSING: TEST PRINT and PRINTING appear on the display panel.

CAUTION: During printing, the media partially exits the printer multiple times. Do not pull the print. Wait for the print to exit completely before touching it.

The printer expects the loaded media to match the media type specified using the DEFAULTS:MEDIA option on the display panel. If, for example, the printer expects paper, and transparency material is loaded, a mismatch message will appear. If you choose to make the test print using incorrect media, the print will not have proper color reproduction for that media type.

What's next

To get the most from your 8650 Color Printer, you need to install the printer drivers and export modules you plan to use. Refer to the Driver Guide and to the Export Module Guide.

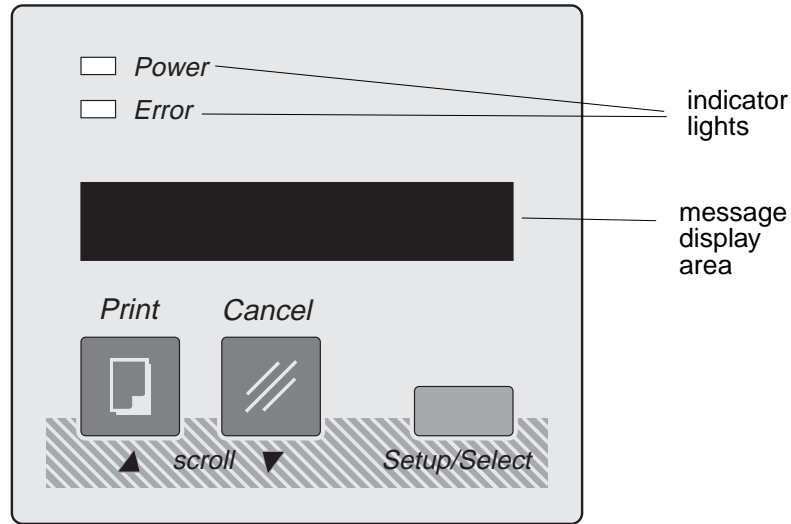
3 *Operating the printer*

This chapter provides the information you need to operate the *KODAK DIGITAL SCIENCE* 8650/8650 PS Color Printer. It includes:

- Looking at the display panel
- Working with the printer settings
- Printing from computer applications
- Scheduling jobs
- Handling and storing prints and transparencies
- Cleaning the printer
- Keeping the printer in good working order
- Working with the printer

Looking at the display panel

The printer display panel is shown below.



Two **indicator lights** show the status of the printer. They are:

- Power light—illuminated when the printer is turned *On*.
- Error light—illuminated when an error occurs. A message describing the error appears in the display panel. The light remains on until you respond to all messages.

When the error light glows steadily, you can correct the problem yourself. When the error light flashes, a system error message appears in the display panel. Turn the printer off and then back on. If the message persists, service is required.

Messages appear on the Liquid Crystal Display (LCD) panel one line at a time. Messages longer than 16 characters are divided into 16-character alternating sections.

Types of messages are—

- Printer status messages—show the mode (raster or PostScript) in which the printer is operating, the size of the media in the paper tray, and the type of ribbon that is loaded. This information is displayed when the printer is idle.
- Job-related messages —show status of the job closest to completion
- Media-related messages—show type of media and ribbon that are loaded
- Error messages— appear when the paper tray is empty, when the cover is open, or when errors occur

Use the **Print** and **Cancel** buttons to set printing options, cancel jobs, override mismatches, and generate test prints.

Use the Cancel button as follows:

- To terminate the job that is closest to completion. For example, you may have a job printing and a job processing. If you press Cancel, the job being printed is ended immediately. No additional pages in that job are printed, and the page currently being printed is ejected. If you press Cancel again, the next job will be canceled, if one exists.
- In combination with Setup, to scroll up through the Setup menu.

Use the Print button as follows:

- To generate a test print when the printer is idle.
- To begin printing after a mismatch occurs. In combination with Setup, to scroll down through the Setup menu.

Use the **Setup/Select** button to enter the Setup mode to change the way the printer is set up. See “Working with the printer settings” on page 3-4 for complete information.

Working with the printer settings

You view and change the printer settings using the printer's Setup mode.

Table 3-1 lists the printer settings and options, and describes each option. It also shows the factory default for each setting.

Table 3-1. **Printer settings**

<i>setting</i>	<i>options</i>	<i>description</i>	<i>factory default</i>
Mode (setting available ONLY if the printer can operate in both modes)	PostScript and Raster	Specifies which mode the printer is operating in. WARNING: When an external hard drive is connected to a computer, you MUST disconnect the SCSI cable before switching from raster to PostScript mode. Otherwise, the hard drive may be damaged.	Postscript
Port (Parallel)	Mode - Normal and Binary	Determines whether the parallel port will accept data in normal PostScript or Adobe binary mode. In normal mode, only printable characters are accepted; characters in high ASCII range (128-255) are not accepted. Binary mode support high ASCII range; full eight-bit data may be sent.	Normal
Port (Ethertalk)	Version 2 and Version 1	Determines whether Version 1 or Version 2 of AppleTalk will be supported.	Version 2
Port (IPX)	802.2, 802.3, SNAP, ETHERNET 2, AUTOSELECT	Specifies the framing type the printer should expect.	AUTO-SELECT
Port (TCP/IP)	fill in IP Address in following format: nnn.nnn.nnn.nnn	Sets up the Internet address of the printer within a TCP/IP network.	no default

Table 3-1. **Printer settings**

Port (SCSI - PostScript mode only)	Initiator ID: 0 - 7 Enable: Yes and No	Initiator ID: Specifies the printer's SCSI address when the printer is operating in PostScript mode. Enable: When an external hard drive is connected, allows the printer to act as the SCSI bus initiator. CAUTION: Leave the setting at NO unless an external drive is connected. Otherwise, the computer's hard drive could be damaged.	6 No
Port (SCSI - raster mode only)	Target ID 0 - 7	Specifies the printer's SCSI address when the printer is operating in raster mode.	5
Defaults (Media type)	Paper, Transparency, Draft	<ul style="list-style-type: none"> • Select Paper if paper is loaded in the tray. • Select Transparency to print high-density transparencies. • Select Draft for faster printing and proofing of transparencies. 	Paper
Defaults (Factory)	Reset	Lets you restore the printer settings to their factory default values. IMPORTANT: If the Network Interface Card is installed, resetting to the factory defaults may cause network printing problems.	
Defaults (Media color)	Photographic, Commercial, Publication	Media color choices allow you to print proofs that approximate the color and hue of the final press stock. <ul style="list-style-type: none"> • Select Photographic to print onto standard white stock. • Select Commercial to simulate collateral applications. • Select Publication to simulate magazine applications. 	Photographic
Language	English, Francais, Deutsch, Espanol, Italiano	The display panel messages can appear in English, French, German, Spanish, or Italian.	English

Working in Setup mode

To enter Setup mode: Press Setup/Select while the printer is idle.

To scroll through the settings: Press Print to scroll up, Cancel to scroll down. You scroll through the settings continuously.

To select an option: When you find the setting whose options you wish to view, press Setup/Select. An asterisk (*) next to an option means it is selected.

To exit Setup mode: Select SETUP:EXIT. Most changes you make are effective as soon as you exit Setup mode. The exceptions are when you return the settings to the factory defaults, and when you change the printer's operating mode. In these cases, the printer restarts itself when you exit Setup mode. Changes are effective immediately afterward.

To restore the printer settings to their factory settings: Press Setup/Select when SETUP:DEFAULTS appears. Select FACTORY:RESET to restore all the printer settings to their factory settings.

IMPORTANT: If the Network Interface Card is installed, restoring the settings to their factory values may cause network printing problems.

About specifying port information

The options you select must match your host computer settings.

There are different submenus associated with the PORTS menu. Which ones are available depends on whether the printer is running in Raster or PostScript mode, and on whether the Network Interface Card is installed.

The following submenus are available only if the Network Interface Card is installed:

- PORTS:ETHERTALK—lets you specify whether version 1 or 2 of AppleTalk will be used
- PORTS:IPX—lets you specify the framing type to expect when using Novell Netware
- PORTS:TCP/IP—lets you enter the Internet address of the printer network interface card within a TCP/IP network

For complete information, refer to the Installation & Setup Guide for the *KODAK Network Interface Card for the KODAK XLS 8400 Printer, the KODAK XLS 8600/8600 PS Printer, and the KODAK DIGITAL SCIENCE 8650/8650 PS Printer*.

Specifying the printer's SCSI ID (raster mode)

This option—SCSI:TARGET— appears only on printers running in raster mode. The SCSI ID default value is 5.

Select an ID that is not in use on the SCSI bus for any other purpose. For example, do not use the SCSI ID for your hard drive (0 for Macintosh computers, 7 for computers running Microsoft Windows). Similarly, do not use the ID for an external hard drive used for font storage or the ID of a scanner connected to the computer.

Specifying the SCSI connection (PostScript mode)

This option— SCSI:INITIATOR —appears only on printers running in PostScript mode. The SCSI ID default value is 6.

Select an ID that is not in use on the SCSI bus for any other purpose. For example, you cannot use the SCSI ID for your hard drive (0 for Macintosh computers, 7 for computers running Microsoft Windows). Similarly, you cannot use the ID for an external hard drive used for font storage or the ID of a scanner connected to the computer.

INITIATOR:ENABLE lets you determine whether the printer should act as the SCSI bus initiator. The default is NO.

WARNING: *Choose ENABLE:YES only if an external hard drive is connected to the printer. Otherwise, disk damage to the host system could occur.*

Working with media

This section describes the media—paper and transparency material—used with the printer. It also lists handling and storage guidelines.

Thermal paper looks and feels like photographic paper, but it is not light sensitive. The back is imprinted with the Kodak logo. Paper is shipped in 100-sheet packages.

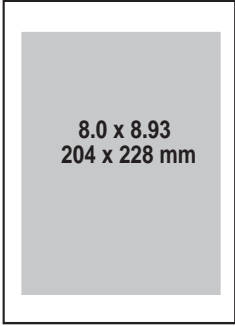
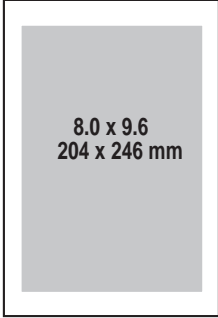
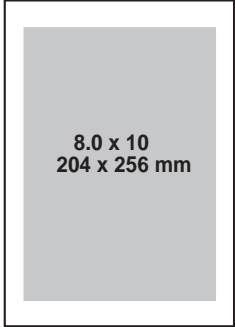
CAUTION: Use only media designed for use in the 8650/8650 PS Color Printer. Using other materials may cause printer problems.


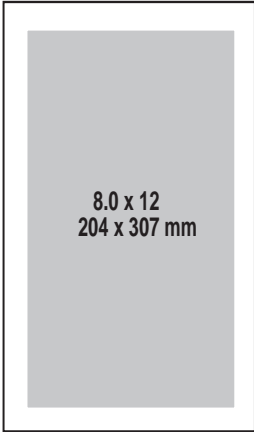

KODAK EKTATHERM XLS Print Paper, available in several sizes, is available in three grades:

- Photographic Grade—used for photographic applications
- Commercial Grade—used for collateral applications
- Publication Grade—used to simulate magazine applications

Table 3-2 lists each paper type and size, lists which ribbons you can use with each type, and shows the maximum image size for each paper type.

Table 3-2 Kodak thermal paper types, sizes, and image size

<i>Type of Paper</i>	<i>Paper Size</i>	<i>Type of Ribbon</i>	<i>Maximum Image Size</i>
KODAK EKTATHERM XLS Print Paper / Photographic Grade CAT No 8614364	8.5 x 11	KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY CAT No 807 6135	
KODAK EKTATHERM XLS Print Paper / Photographic Grade CAT No 8816514	210 x 297mm (8.27 x 11.69)	KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY CAT No 807 6135	
KODAK EKTATHERM XLS Print Paper / Photographic Grade CAT No 8684623	8.5 x 12	KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY CAT No 807 6135	

<p>KODAK EKTATHERM XLS Print Paper / Photo- graphic Grade CAT No 875 1596</p>	<p>210 x 307 mm (8.27 x 12)</p>	<p>KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY CAT No 807 6135</p>	
<p>KODAK EKTATHERM XLS Print Paper / Photo- graphic Grade CAT No 856 5699</p>	<p>8.5 x 14</p>	<p>KODAK EKTATHERM XLS Oversize Three- color ribbon / CMY CAT No 821 4082 KODAK EKTATHERM XLS Oversize Three- color ribbon / XTRALIFE media / CMY CAT No 801 3716 KODAK EKTATHERM XLS Black ribbon / XTRALIFE Media CAT No 857 0152</p>	
<p>KODAK EKTATHERM XLS Print Paper/ Photo- graphic Grade CAT No 807 5640</p>	<p>210 x 358 mm (8.27 x 14)</p>	<p>KODAK EKTATHERM XLS Oversize Three- color ribbon / CMY CAT No 821 4082 KODAK EKTATHERM XLS Oversize Three- color ribbon / XTRALIFE media / CMY CAT No 801 3716 KODAK EKTATHERM XLS Black ribbon / XTRALIFE Media CAT No 857 0152</p>	


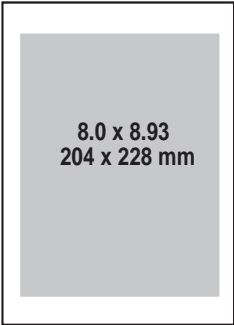
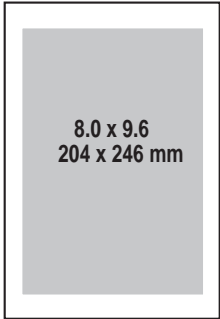
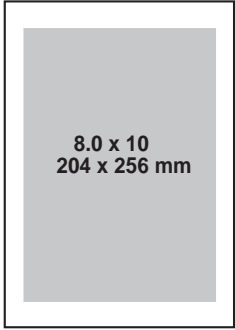
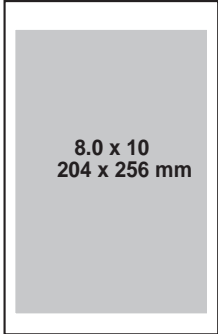
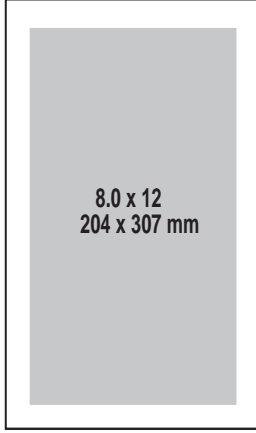

KODAK EKTATHERM XLS Print Paper / Photographic Grade CAT No 867 7759 Commercial Grade CAT No 1581198 Publication Grade CAT No 8811663	9.5 x 14	KODAK EKTATHERM XLS Oversize Three- color ribbon / CMY CAT No 821 4082 KODAK EKTATHERM XLS Oversize Three- color ribbon / XTRALIFE media / CMY CAT No 801 3716 KODAK EKTATHERM XLS Black ribbon / XTRALIFE Media CAT No 857 0152 KODAK EKTATHERM XLS Four-color Ribbon / CMYK CAT No 801 3716	
			

Table 3-3 shows the sizes and maximum image size for KODAK EKTATHERM XLS Transparency Material. The table also shows which ribbons can be used with each size of transparency material.

Table 3-3 Transparency material size and maximum image size

<i>Transparency Material</i>	<i>Size</i>	<i>Type of Ribbon</i>	<i>Maximum Image Size</i>
KODAK EKTATHERM XLS Transparency Material CAT No 852 6618	8.5 x 11	KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 8873945 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 8570152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY* CAT No 8733925	
KODAK EKTATHERM XLS Transparency Material CAT No 850 3005	210 x 297mm (8.27 x 11.69)	KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 8873945 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 8570152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY* CAT No 8733925	

<p>KODAK EKTATHERM XLS Transparency Material CAT No 853 4059</p>	<p>8.5 x 12</p>	<p>KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY* CAT No 807 6135</p>	
<p>KODAK EKTATHERM XLS Transparency Material CAT No 871 7001</p>	<p>210 x 307 mm (8.27 x 12)</p>	<p>KODAK EKTATHERM XLS Three-color ribbon / CMY CAT No 163 0474 KODAK EKTATHERM XLS Black ribbon / Xtralife media CAT No 857 0152 KODAK EKTATHERM XLS Three-color ribbon / XTRALIFE media / CMY* CAT No 807 6135</p>	
<p>KODAK EKTATHERM XLS Transparency Material CAT No 852 9679</p>	<p>8.5 x 14</p>	<p>KODAK EKTATHERM XLS Oversize Three- color ribbon / CMY CAT No 821 4082 KODAK EKTATHERM XLS Oversize Three- color ribbon / XTRALIFE media / CMY CAT No 801 3716 KODAK EKTATHERM XLS Black ribbon / XTRALIFE Media* CAT No 857 0152</p>	

KODAK EKTATHERM XLS Transparency Material CAT No 861 0651	210 x 358 mm (8.27 x 14)	KODAK EKTATHERM XLS Oversize Three- color ribbon / CMY CAT No 821 4082 KODAK EKTATHERM XLS Oversize Three- color ribbon / XTRALIFE media / CMY* CAT No 801 3716 KODAK EKTATHERM XLS Black ribbon / XTRALIFE Media* CAT No 857 0152	
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* Only laminates to paper. When printing transparency material with XLTRALIFE ribbon, the laminate patch is bypassed.

NOTE: See Chapter 2 for information on working with media and ribbon.

Printing from computer applications

You print through your applications using the Printer Drivers or the Export Modules that came with the printer.

- For application-specific printing information, refer to the User's Guide for the application or the Application Notes on the CD that came with your printer.
- For information about printing with the 8650 PS Printer in PostScript mode, refer to the Printer Driver User's Guide.
- For information about printing with the 8650 Printer and the 8650 PS Printer in raster mode, refer to the Export Modules User's Guide.

The time it takes to print an image depends on the application and on the type of image being printed. Some images take much longer to print than others. A file made up of lines generally takes less time to print than a file that is defined in bits, such as a scanned image.

As printing takes place, the paper moves through the imaging path multiple times. During this process, the paper partially exits the printer. Do not pull on the print. Wait until the print exits completely before touching it.

NOTE: When the printer is running in raster mode, the last image you send remains in memory until you turn the printer *Off*.

Scheduling jobs

The number of jobs that can be queued to the printer at once depends on the memory available in the printer. If large files are sent, fewer jobs can be processed. Installing additional memory in the printer increases the number of jobs that can be processed at a time.

If the printer is networked, the network configuration affects job scheduling. When on a network, the printer polls the ports in a round robin manner. When it receives a job, it stops polling until the job is complete. Then the printer looks to the next port in the list.

The position of the ports in the list affects the order in which jobs are processed. When a job is sent is not the sole determinant of when it will be processed and printed.

Handling and storing prints and transparencies

The image stability of thermal prints depends on factors such as temperature, relative humidity, and exposure to light or to biological or chemical contaminants. Using XtraLife ribbon increases print shelf life.

Your thermal images will last a long time if you handle and store them as described below.

- Handle prints as little as possible. When handling prints, make sure your hands are clean and free of food, oil, and grease. Wear clean gloves when possible, and hold prints by the edges.
- Store thermal prints and transparencies in a cool, dry environment free of chemical contamination.
- The lower the storage temperature, the better. Avoid temperatures higher than 72°F (25°C) for extended periods.
- A relative humidity between 30% and 50% is ideal.
- Avoid exposure to high-intensity light sources, particularly fluorescent light and sunlight, which are rich in ultraviolet radiation.
- Avoid exposure to vinyl items (those made of polyvinyl chloride [PVC]) or any plastic which contains plasticizer. These items usually have a distinct “plastic” odor. If you use transparency sleeves, make sure that they are not PVC-based.

Cleaning the printer

To help ensure good printer performance and high-quality output, make sure the printer's operating environment is clean and dust-free.

Clean the printer regularly as described below.

Before you begin: Turn the printer *Off* and unplug it.

- Clean the thermal head when you load a new ribbon or if you notice image quality problems.
- Wipe the printer cabinet, the paper tray area, and the output tray with distilled or deionized water and a damp, lint-free cloth. This eliminates dust buildup and prevents dirt from getting into the printer.

CAUTION: **Never use abrasives or harsh chemicals to clean any part of the printer.**

Do not use the alcohol cleaning pads packaged with new ribbon to clean the printer cabinet.

- Clean the area around and under the printer to keep dust out of the cooling fan.
- Vacuum the printer and the surrounding area to keep them dust free.

Keeping the printer in good working order

To keep the printer in good working order:

- Keep the printer clean. Keep the surrounding area vacuumed and litter-free.
- Protect the printer from tobacco smoke, dust, sand, and liquid spills.
- Do not place objects on top of the printer.
- Do not keep anything under the printer. Doing so may block the fan on the bottom of the printer.

Working with the printer

Follow these guidelines when working with the printer:

- Keep the plastic dust cover in place when operating the printer.
- Keep the blue protective cover in place when not using the printer.
- Remove prints from the output tray **ONLY AFTER** the printer ejects them.
- Do **NOT** put a print back into the output tray. Doing so can cause jams and loss of completed prints.
- Avoid loading more than 100 sheets of paper in the paper tray.

4 *Troubleshooting the printer*

This chapter describes the problems you may occasionally have with the *KODAK DIGITAL SCIENCE* 8650/8650 PS Color Printer. It also tells how to solve these problems. This chapter contains the following sections:

- Error messages and how to resolve them
- What to do when mismatches occur
- What to do if the printer is not operating as it should
- Clearing the paper path
- Cleaning the pick rollers
- Cleaning the sensors
- Packing the printer
- Getting additional help

Error messages and how to resolve them

Error messages indicate that a problem has occurred. More than one problem can occur at a time. However, only one error message can appear at a time. Messages related to high-priority problems are displayed before lower priority ones.

You must resolve problems in the order in which they appear. For example, a CLOSE COVER message may appear. After you close the cover, a paper mismatch message may appear. After you correct the mismatch, if there are no other errors, READY will be displayed.

Table 4-1 lists and describes the common error messages, and tells what to do if these messages appear.

Table 4-1 **Common error messages**

<i>Error message</i>	<i>Possible cause</i>	<i>Possible solution</i>
CHANGE RIBBON	<ul style="list-style-type: none"> • The supply spool is empty • The ribbon's barcode cannot be read. • The wrong type of ribbon is loaded (for example, CMYK ribbon is loaded on a printer with 32 MB of memory). 	<ul style="list-style-type: none"> • Change the ribbon. • Make sure the barcode is legible. If the message persists, service is required. • Load the correct type of ribbon.
CHECK TRAY	<ul style="list-style-type: none"> • The tray is empty. • The tray is inserted improperly. • There is a paper jam in the tray area. 	<ul style="list-style-type: none"> • Load paper or transparencies. • Remove the tray. Reinsert the tray, making sure it is seated correctly. • Clear the jam.
CLEAR PAPER PATH	A paper jam occurred.	Clear the paper path. See "Clearing the paper path" on page 4-11

CLEAR RIBBON JAM	The ribbon is jammed. This may be caused by a paper jam.	Press Cancel to eject the paper. If the message persists, do as follows: 1. Clear the paper jam. 2. If necessary, clear the ribbon jam. 3. Close the cover. 4. Remove the paper tray. 5. Clear paper from the tray area. 6. Reinsert the tray. 7. Turn the printer Off and then back On. If the message still persists, service is required.
CLOSE COVER	The printer cover is open.	Close the cover.
INIT ERROR	The printer failed to initialize.	Parallel connection ONLY: 1. Turn Off the printer. 2. Make sure the computer is running. 3. Turn the printer back On. Other connections: 1. Turn both the printer and host computer Off. 2. Disconnect the interface cable from the printer. 3. Turn the printer On. 4. <i>If the printer does initialize</i> , proceed to step 5. <i>If the printer does not initialize</i> , turn the printer Off and then back On. If the message persists, service is required. 5. Turn the printer Off. 6. Reconnect the interface cable. 7. Turn the printer On. 8. <i>If the printer does initialize</i> , turn the host computer On. <i>If the printer does not initialize</i> , service is required.
INSERT TRAY	The paper tray is not in place.	Make sure the tray is inserted and seated correctly.

LOAD PAPER LOAD TRANS- PARENCY	<ul style="list-style-type: none">• The tray is empty.• The wrong size media is loaded.• Paper is loaded and transparency was requested or vice versa.• Media is not being picked up from the tray.• Media is stuck in the printer.	<ul style="list-style-type: none">• Load the type of media requested.• Load the correct size media. • Load the type of media requested. • Clean the picker rollers. See "Cleaning the pick rollers" on page 4-14.• Clear the paper path. See "Clearing the paper path" on page 4-11
LOAD RIBBON	The ribbon type that is loaded does not match the requested ribbon type.	Load the type of ribbon requested.

Table 4-2 Machine Generated Error Codes

<i>Condition/Error Code</i>	<i>Description</i>	<i>Possible solution</i>
500	No RECEIVER at LEAD EDGE SENSOR when expected	<ul style="list-style-type: none"> • Verify that the correct media and ribbons are loaded. • Clean sensors. See "Cleaning the sensors" on page 4-16. • If problem persists call for service.
501	RECEIVER stuck at LEAD EDGE SENSOR	
502	RECEIVER size change without removing TRAY	
503	Invalid TRAY size input	
508	XLS 8657 ONLY: RECEIVER Stuck at URGE SENSOR	
510	BAR CODE LABEL not correct/BAR CODE SENSOR or FRU malfunction	
511	BAR CODE LABEL not correct or has damage/ BAR CODE SENSOR or FRU malfunction	<ul style="list-style-type: none"> • Power cycle printer • If error code doesn't clear, call for service.
600, 601, 602, 603	CONTROLLER PROM or BOARD failure	
608, 609, 60A, 60C	THERMAL HEAD/ CABLE, CONTROLLER PRINTED CIRCUIT BOARD	
610	LCD or CONTROLLER PRINTED CIRCUIT BOARD	
618, 60B	EPROM, THERMAL HEAD	

700	Inboard THERMAL HEAD POSITION SENSOR #2 open	<ul style="list-style-type: none"> • Open the top cover of the printer. • Power cycle the printer • Close the top cover • If error doesn't clear, call for service
701	Inboard THERMAL HEAD POSITION SENSOR #2 blocked	
702	Outboard THERMAL HEAD POSITION SENSOR #1 open	
703	Outboard THERMAL HEAD POSITION SENSOR #1 blocked	
708	DONOR PATCH SENSING EMITTERS not sensing DONOR	<ul style="list-style-type: none"> • Turn off the printer. • Disconnect all cables except power. • Turn on printer. • If error doesn't clear, call for service • If error code disappears, the computer, cabling or software could be causing the problem.
709	DONOR SENSORS not stable	
710, 711, 712	DSP Linetime response times out	
718	CONTROLLER PRINTED CIRCUIT BOARD	
719	THERMAL HEAD/ CABLE, CONTROLLER PRINTED CIRCUIT BOARD	
720, 721	CONTROLLER PRINTED CIRCUIT BOARD/CABLE	
[722][INIT ERROR]	PLATFORM	
730	THERMAL HEAD Cooling malfunction	
733	THERMAL HEAD Heating malfunction	
738, 739	CONTROLLER, RAM	

740, 741, 742	PROGRAM PROMS or CONTROLLER PRINTED CIRCUIT BOARD	<ul style="list-style-type: none"> • Turn off the printer. • Disconnect all cables except power. • Turn on printer. • If error doesn't clear, call for service • If error code disappears, the computer, cabling or software could be causing the problem.
748, 749, 74A, 74B, 74C, 74D	PHM Failure	
750-756	Unexpected write from DSP	
757	DSP Set Verify Failure	
760-773, 76E, 76F, 76A, 76B, 76C, 76D	CONTROLLER PRINTED CIRCUIT BOARD	
800-857	General CONTROL- LER PRINTED CIR- CUIT BOARD	
900-930, 090B, 091B, 093B, 094B	DSP BLOCK, CHECK- SUM	Turn the printer <i>Off</i> and then back <i>On</i> . If the message persists, service is required.
SERVICE REQ XXX	An error occurred. The message includes a 4-digit error code.	

Table 4-3 **Common error messages**

<i>Error</i>	<i>Description</i>	<i>Possible solution</i>
POWER INDICA- TOR LED not illu- minated	LCD POWER INDICA- TOR not illuminated, or printer does not oper- ate.	<ul style="list-style-type: none"> • Verify the printer is plugged in, turned on and that the power cord and wall outlet are good. • Call for service.
No Printed Image on TRANSPAR- ENCY/RECEIVER	The printer completes the print cycle, but there is not image on the RECEIVER	<ul style="list-style-type: none"> • Press the print button on the printer to make a Test Print • If the Test Print is blank, call for service. • If Test Print is not blank, reload software and check cabling.

When mismatches occur

Mismatches result from differences in requested ribbon type, media type, or media size.

Ribbon type mismatch

If the print job specifies a ribbon type that is not loaded, a mismatch occurs. Ribbon mismatches result from:

- Lamination differences (for example, XtraLife ribbon is requested but is not loaded). For this situation, you can press Print to print the job with the currently loaded ribbon.
- Image size differences (for example, a large image size is requested but oversize ribbon is not loaded). For this situation, you must change the ribbon or press Cancel to cancel the job.
- Ribbon color differences (for example, black-only printing is requested but a color ribbon is loaded). For these situations, you must change the ribbon or press Cancel to cancel the job.

Receiver type mismatch

If the print job specifies a media type that is not loaded (for example, paper is requested but transparency material is loaded), a mismatch occurs. You have three choices:

- Load the correct media type
- Press Print to override the error without changing media

IMPORTANT: Printing without loading the correct media type may result in poor color reproduction.

- Press Cancel to cancel the job

Receiver size mismatch

If the print job specifies a media size that is not loaded, a mismatch occurs. Size mismatches are of two types:

- The image size will fit on the loaded media. You can load the correct size or print on the currently loaded media
- The image size is larger than the loaded media. Change the media or cancel the job.

If the printer is not operating correctly

You may be able to identify or correct problems yourself. If possible, make a test print. Use Table 4-4 to find and try to correct the problem. If you cannot solve the problem, service is required. See "Getting additional help" on page 4-19.

Table 4-4. Solving common printer problems

Problem	Possible cause	Possible solutions
Printer does not turn on.	<ul style="list-style-type: none"> The printer power is not on. Cables and cords are not connected securely. 	<ul style="list-style-type: none"> Make sure the power switch is in the "I" position. Make sure cables and cords are connected properly.
Printing takes much longer than usual.	<ul style="list-style-type: none"> The image file size may be larger than usual and may therefore take longer to process. It is too warm. 	<ul style="list-style-type: none"> Wait a few minutes. Turn the printer off for ten minutes to let it cool. Consider moving the printer to a location where the temperature is lower.
Nothing happens when a job is sent.		<ul style="list-style-type: none"> Wait to see if the job is still processing. Try printing a file that you have printed previously. Verify all export module or printer driver settings. Check communications settings for compatibility between printer and host. Follow instructions for INIT error on page 4-3. Disconnect the cable from the printer and try a test print. If this does not work, service is required.
<p>Narrow white lines run lengthwise on prints. (See image 2 at the end of this guide.)</p> <p>White or colored speckles or spots appear on prints. (See image 3 at the end of this guide.)</p>	Dust or dirt has contaminated the print head.	<ul style="list-style-type: none"> Make sure the media in the tray is clean and streak-free. Make sure the ribbon is clean. Clean the print head. <p>If the problem persists, service is required.</p>

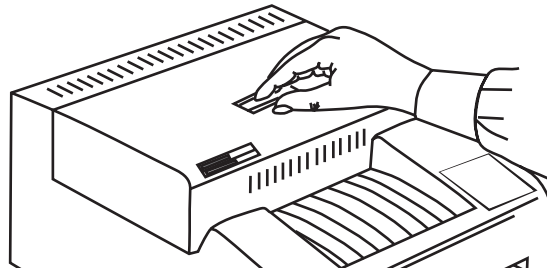
Multicolored spots appear on prints.		<ul style="list-style-type: none"> • Clean the printer and the surrounding area. • Move the printer away from ventilation ducts or open doors.
Smudges, smears, and fingerprints have caused irregularly shaped and colored areas to appear on the print. (See image 1 at the end of this guide.)	Fingerprints or other oils have contaminated the paper or ribbon.	<p>Handle media and ribbon carefully and as described in Chapter 2 of this guide.</p> <p>Use only KODAK EKTATHERM XLS XTRALIFE color ribbon.</p>
Printer initializes, but does not enter the READY state.		<ul style="list-style-type: none"> • Disconnect and reconnect the interface cable. • Restart the printer. <p>If the problem persists, service is required.</p>
Edges of transparency material curl on dense prints.		<ul style="list-style-type: none"> • Put prints in transparency sleeves. • Try using the Printer Driver or Export Module's <i>Mirror</i> option, which will change the way that ink is applied to the page.
Paper does not feed.		<ul style="list-style-type: none"> • Look at the paper. Remove sheets with irregularities. • Reduce the size of the stack of media in the paper tray. • Make sure that the blue stiffener sheet is at the bottom of the paper tray.
Printer does not respond when you press buttons.	You may have pressed invalid buttons.	<ol style="list-style-type: none"> 1. Make sure the cover is closed. 2. Reinsert the paper tray. 3. Restart the printer. 4. Make sure the printer is in READY mode.

Clearing the paper path

Paper may occasionally jam in the printer. Jams are typically identified by a CLEAR PAPER PATH or CHECK TRAY message.

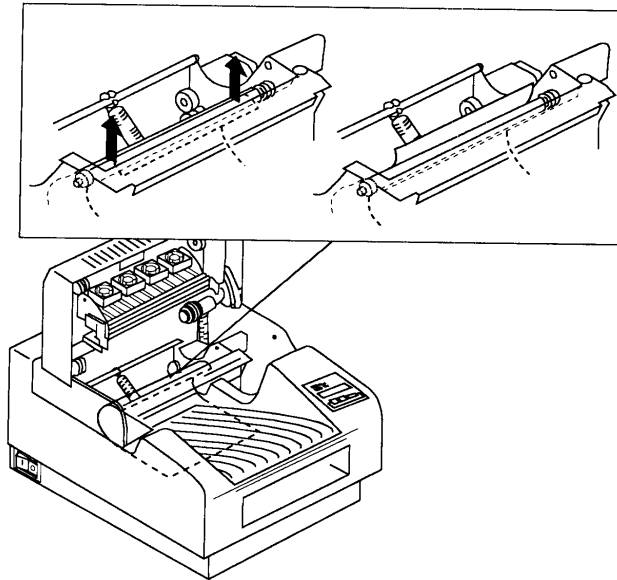
To clear the paper path—

1. Open the printer cover.



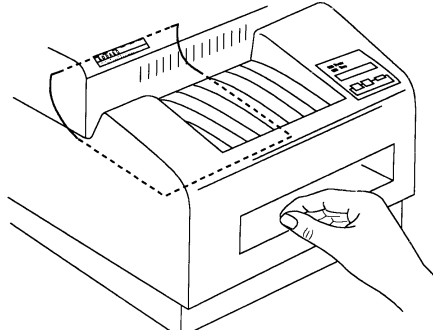
NOTE: An automatic locking feature prevents you from opening the cover during printing. If you can't open the cover, turn the printer *Off* and then *On* again. If you still can't open the cover, service is required.

2. If media is in the paper path, gently pull it up and out of the printer. Then close the printer cover.



3. If media is jammed in the paper tray area, remove the paper tray. Then look through the tray insertion slot into the tray area.

4. Gently remove any jammed media from the paper tray area.



NOTE: If you cannot remove the media, service is required.

5. Slide the tray back into the printer.

Cleaning the pick rollers

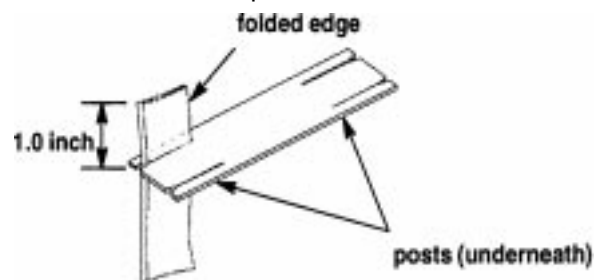
If the paper is not being picked from the tray properly, the pick rollers may be dirty. You use two water pads and a pad holder to clean the rollers.

To clean the pick rollers:

1. Remove a water pad from the packet and fold it in half.



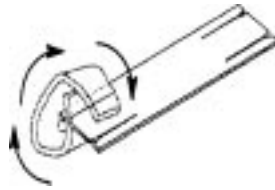
2. Insert the pad into the pad holder slot. About 1 inch of the pad should stick out the top, as shown.



NOTE: The posts are on the bottom of the pad holder.



3. Wrap the longer end of the pad around the pad holder and insert it into the pen slot.



4. Pull the other edge of the pad to tighten it.



5. Repeat steps 1 to 4 for the other end of the pad holder.
6. Remove the paper tray from the printer. Remove the cover from the tray.
7. Remove the media and blue stiffener sheet from the tray.
8. Set the media on a freshly cleaned surface.
9. Insert the prepared pad holder into the paper tray.



The posts on the bottom of the pad holder fit into the holes near the front of the paper tray.

10. Load the paper tray back into the printer.
11. Make a test print.
12. Wait for the printer to cycle and for the error light on the display panel to illuminate.
13. Remove the tray from the printer, then reinsert it.
14. Wait for the printer to cycle and for the error light to illuminate again.

15. Remove the tray.
16. Remove the prepared pad holder from the tray.
17. Load the media into the tray and put the lid back on.
18. Insert the tray in the printer.

IMPORTANT: Wait about five minutes for the rollers to dry before using the printer.

Cleaning the sensors

Important: Before cleaning, turn off the printer.

Follow these steps to clean the five ribbon sensors in the printer.

1. Locate the two sensors on top of and in the center of the print head. They will be visible behind the ribbon.
2. Remove the ribbon.
3. Wipe the sensors with an alcohol pad.
4. Replace the ribbon.
5. To locate the next two sensors, look above where a finished print comes out and you will see a steel plate with some fringe. At the center of the plate about one inch back, down the slope is an oval cut out with the two receiver sensors.
6. Wipe the sensors with an alcohol pad.
7. To locate the fifth sensor, look at the lower, supply, ribbon spool. On the left hand side is a bar-code label. Immediately above the bar-code label is a black box with some wires coming out of it. The sensor is located on the bottom of that box (the side of the box that faces the bar-code label.)
8. Using an alcohol pad, clean the sensor area.

Repacking the printer

Pack the printer as follows if you need to ship it.

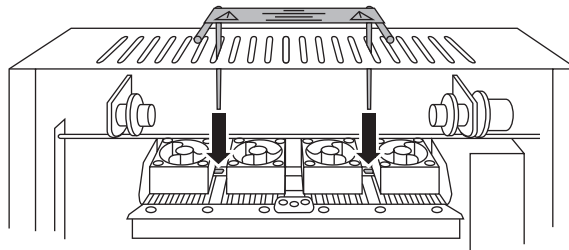
1. Remove media from the paper tray. Pack the paper tray in its original box.
2. Open the printer cover. Then remove the ribbon spools. Discard them or store them in their original box.
3. Insert the shipping pins as follows:

CAUTION: Insert the pins as described.

—Insert the left pin through the seventh slot from the left.

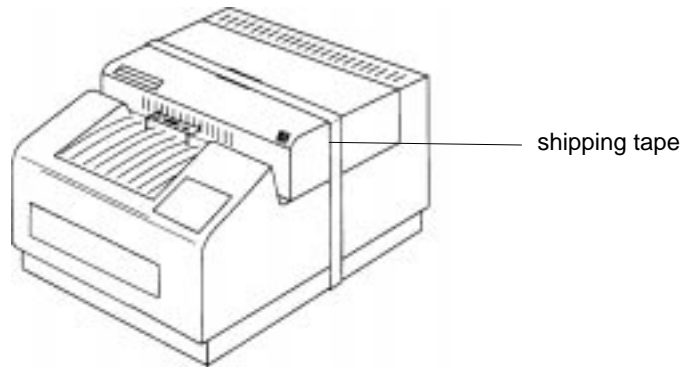
—Insert the right pin through the sixth slot from the right.

4. Push the pins until the ends protrude about 1 1/2 inches from the slot.



5. Close the printer cover.

6. Put appliance filament tape over the cover of the printer.
The tape must cover the latch and run down both sides of the printer all the way to the bottom.



7. Put the printer in its original plastic bag to keep it clean during shipping.
8. Pack the printer in its original box.

Getting additional help

Your Kodak dealer is the best source for information about your printer and about purchasing supplies and accessories.

In addition, technical support is also available on Kodak's web site at www.kodak.com Call 1-800-23KODAK (1-800-235-6325) from 9:00 a.m. to 8:00 p.m. Eastern Standard Time on regular business days.

Help numbers for the Asia/Pacific and European regions are listed below.

Country	Country code	Helpline number
Australia	61	3 353 2173
Hong Kong	85	2 5649387
Indonesia	62	21 430 4527
Korea	82	02 708 5471 4
Malaysia	60	3 757 2722
Philippines	63	2 816 67 18
Singapore	65	4736611
Thailand	66	2 271 3040 x396
Taiwan	88	6 2 893 8234

Country	Country code	Helpline number
Belgium	32	02/2632400
Denmark	45	43/717111
Finland	358	90/87071
France	33	1/4989-0083
Germany	49	0711/406-5561
Italy	39	02/66028454
Netherlands	31	03405/99704
Norway	47	02/818181
Spain	34	91/6267100
Sweden	46	08/58023663
UK	44	044261122 Ext. 44239

Appendix A

Printer specifications/ site requirements

Printer specifications

Printer dimensions

Width: 16.6 inches (43.2 cm)

Depth (with tray inserted): 21 inches (52.7 cm)

Height: 12 inches (30.5 cm)

Printer weight

57 lbs (24.9 kg)

Space requirements

Minimum space required with tray inserted:

Width: 17 inches (43.2 cm)

Depth: 24 inches (61 cm)

Height: 12 inches (30.5 cm)

Minimum space required for removing tray and opening cover:

Width: 17 inches (43.2 cm)

Depth: 35.5 inches (90.2 cm)

Height: 20.25 inches (52.4 cm)

Operating environment

Ambient operating temperature: 59° to 86°F (15° to 30°C)

Relative humidity: 20 to 76%

Power requirements

Voltage/frequency

US/Canada 90 to 250v/47 to 60Hz

Europe 220/50Hz

UK 240/50Hz

Power consumption

250 watts maximum

Appendix B

Accessories and supplies

This appendix lists the accessories and supplies available for the KODAK DIGITAL SCIENCE™ 8650/8650 PS Color Printer. It also tells how to order them.

Accessories

Printer accessories are listed below. Purchase these items through your printer dealer or distributor.

Accessory	Catalog Number
PostScript UPGRADE KIT for <i>DIGITAL SCIENCE</i> 8650 Color Printer	883 3667
KODAK Network Interface Card for KODAK XLS 8400 PS Printer, KODAK XLS 8600 PS Printer, and KODAK DIGITAL SCIENCE 8650 PS Color Printer	856 3678
KODAK A, 8.5, Adjustable Tray	101 8969
KODAK A4, 8.27, Adjustable Tray	851 1420
KODAK 9.5 x 14 Adjustable Tray	882 0060

Supplies

To order the following supplies, contact Kodak Parts Services at 1-800-431-7278.

Accessory	Part Number
Alcohol cleaning pads (box of 50)	1C8079
Water cleaning pads (box of 50)	1C8081
Pick roller cleaning kit	5B5910
Shipping pins (all thermal printers)	989021

Ribbons

Ribbons available for the printer are listed below. Purchase ribbons through your printer dealer or distributor.

Ribbon Type	Maximum Image Size	Catalog Number
KODAK EKTATHERM XLS Three-Color Ribbon	8 x 10	163 0474
KODAK EKTATHERM XLS Oversize Three-Color Ribbon	8.5 x 12	821 4082
KODAK EKTATHERM XLS Three-Color Ribbon / XTRALIFE Media / CMY	8 x 10	807 6135
KODAK EKTATHERM XLS Black Ribbon / XTRALIFE Media	8.5 x 12	857 0152
KODAK EKTATHERM XLS Oversize Three-Color Ribbon / XTRALIFE Media / CMY	8.5 x 12	801 3716
KODAK EKTATHERM XLS Four-Color Ribbon / CMYK	8.5 x 12	879 2939

Paper

Paper available for the printer is listed below. Purchase paper through your printer dealer or distributor. Paper is shipped in 100-sheet packages.

Paper Type	Size	Catalog Number
KODAK EKTATHERM XLS Print Paper /Photographic Grade	8.5 x 11 (216 x 281 mm)	861 4364
KODAK EKTATHERM XLS Print Paper /Photographic Grade	8.5 x 12 (216 x 307 mm)	868 4623
KODAK EKTATHERM XLS Print Paper /Photographic Grade	8.5 x 14 (216 x 358 mm)	856 5699
KODAK EKTATHERM XLS Print Paper /Photographic Grade	210 x 297mm 8.27 x 11.69	881 6514
KODAK EKTATHERM XLS Print Paper /Photographic Grade	210 x 307mm (8.27 x 12)	875 1596
KODAK EKTATHERM XLS Print Paper /Photographic Grade	210 x 358 mm (8.27 x 14)	807 5640
KODAK EKTATHERM XLS Print Paper /Photographic Grade	9.5 x 14 (243 X 358 mm)	867 7759
KODAK EKTATHERM XLS Print Paper /Commercial Grade	9.5 x 14 (243 X 358 mm)	158 1198
KODAK EKTATHERM XLS Print Paper /Publication Grade	9.5 x 14 (243 X 358 mm)	881 1663

See Chapter 3 for illustrations of the maximum image size for each paper size.

Transparency material

Transparency sizes available for the printer are listed below. Purchase transparency material through your printer dealer or distributor.

Transparency material is shipped in 100-sheet packages.

Transparency Type	Size	Catalog Number
KODAK EKTATHERM XLS Transparency Material / for use with the KODAK A Adjustable Tray	8.5 x 11 (216 x 281 mm)	852 6618
KODAK EKTATHERM XLS Transparency Material / for use with the KODAK A Adjustable Tray	8.5 x 12 (216 x 307 mm)	853 4059
KODAK EKTATHERM XLS Transparency Material / for use with the KODAK A Adjustable Tray	8.5 x 14 (216 x 358 mm)	852 9679
KODAK EKTATHERM XLS Transparency Material (A4) / for use with the KODAK A4 Adjustable Tray	210 x 297 mm (8.27 x 11.69)	850 3005
KODAK EKTATHERM XLS Transparency Material / for use with the KODAK A4 Adjustable Tray	210 x 307 mm (8.27 x 12)	871 7001
KODAK EKTATHERM XLS Transparency Material / for use with the KODAK A4 Adjustable Tray	210 x 358 mm (8.27 x 14)	861 0651

See Chapter 3 for illustrations of the maximum image size for each transparency size.

Appendix C

Customizing the printer

This appendix describes two ways you can customize your *KODAK DIGITAL SCIENCE* 8650/8650 PS Color Printer to enhance its performance. They are by:

- connecting an external hard drive to the printer.
- adding additional memory to the printer.

Connecting an external hard drive enables you to store ADOBE Type Manager (ATM) fonts (not included) making them permanently accessible to the printer.

You can purchase ADOBE fonts for your 8650 printer from your local distributor. To learn more about available ADOBE products, visit their Web site at <http://www.adobe.com>.

Adding additional memory has several benefits. Adding more memory may allow you to:

- increase the speed at which images are processed.
- download more fonts with PostScript jobs.
- simultaneously process and print more and/or larger jobs.

Adding an external hard drive

This procedure applies only to 8650 PS Color Printers operating in PostScript mode.

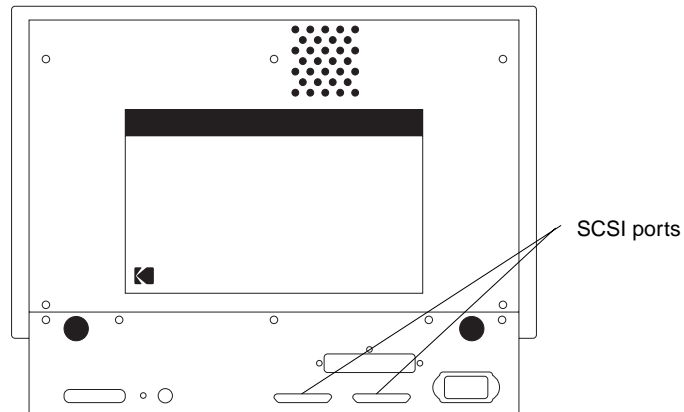
If you want additional ATM fonts to be permanently accessible to the printer, you need to add an external hard drive. Once you connect and format an external hard drive, you can use the software utilities available for your system to download the ATM fonts and store them on the hard drive.

IMPORTANT: The size of the hard drive is limited to 2000 MB or less.

Installing the hard drive

First, connect the cable as follows:

1. Turn the printer *Off*.
2. Disconnect all devices that are connected to the printer with a SCSI cable.
3. Set the SCSI ID for the external hard drive to any ID that is different from the printer's initiator ID. Refer to the manual shipped with the hard drive for instructions.
4. Connect one end of the SCSI cable to one of the printer's SCSI ports. Connect the other end of the cable to the hard drive.



5. If the printer's other SCSI port is not in use, connect a 50-pin SCSI terminator to that port.
6. *If the hard drive does not have an internal terminator*, connect a terminator to the open SCSI port.
Refer to the manual shipped with the hard drive for instructions.
7. Turn the hard drive and then turn the printer on.

Initializing the hard drive

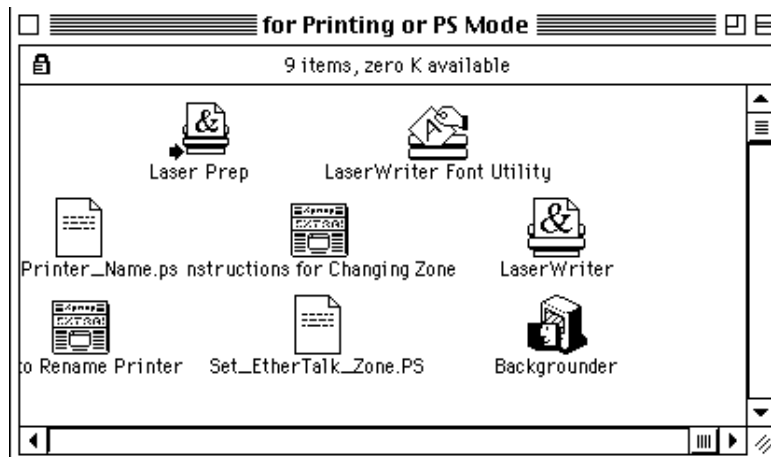
Next, you must initialize the hard drive.

These directions tell how to initialize a drive with the printer connected to a Macintosh computer.

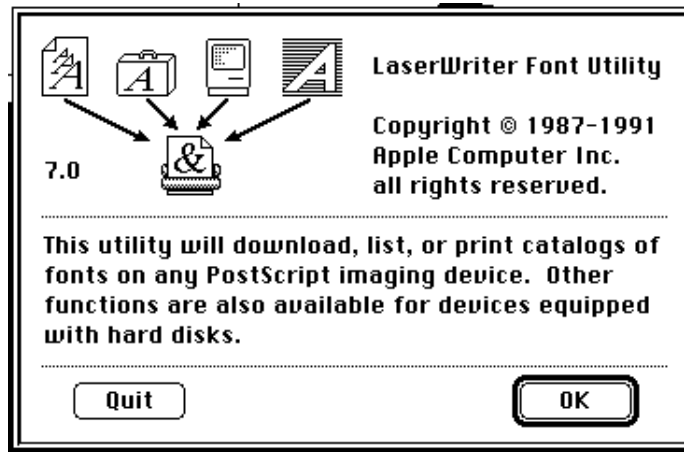
WARNING: Initializing the drive reformats it, and all data on the drive will be lost. Complete this procedure only as part of the installation process.

1. To set up the printer to communicate with an external hard drive, you must first enable the initiator.
 - Press *Select/Setup* on the display panel to enter the Setup menu.
 - Select:
 - "Ports"
 - "SCSI Initiator:Enable"
 - Set to YES*.
 - Use the Select/Setup key to exit the menu.
2. Open the Chooser. Using the Laserwriter 7.x driver, select the 8650 PS Printer to which the hard drive is connected.
3. If you did not install the utilities program when you loaded the drivers, insert the CD shipped with the printer into the CD-ROM drive.
The icon for the CD appears.
4. Double-click on the icon for the CD.
5. Double-click on the English folder.
6. Double-click on the Utilities folder.

The For Printing or PS Mode window appears.

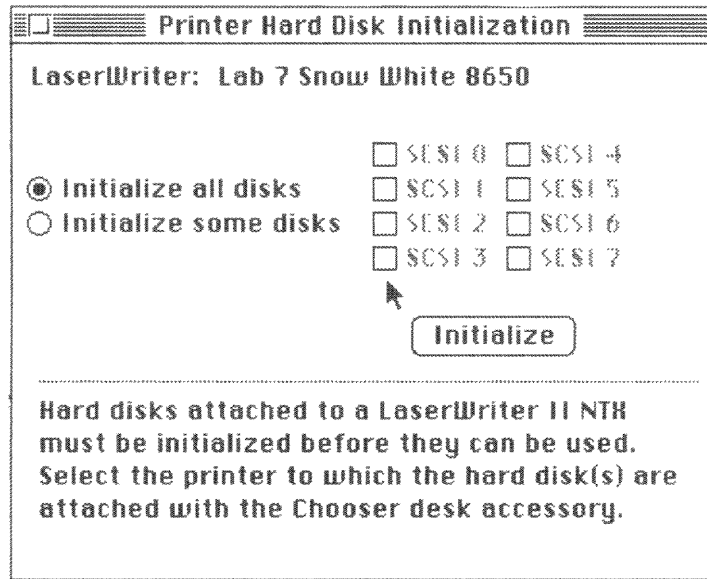


7. Double click the *LaserWriter Font Utility* icon.
The LaserWriter Font Utility window appears.



8. Click on *OK*.
A message appears stating that the LaserWriter Font Utility is checking the characteristics of the current printer. The LaserWriter Font Utility then becomes the active application.
9. From the File menu, select *Initialize Printer's Disk*.

The following window appears



10. Click on *Initialize*.

A message appears stating that all information on the disks will be erased.

11. Click on *OK* to initialize the hard drive.

A message appears stating that initialization was successful.

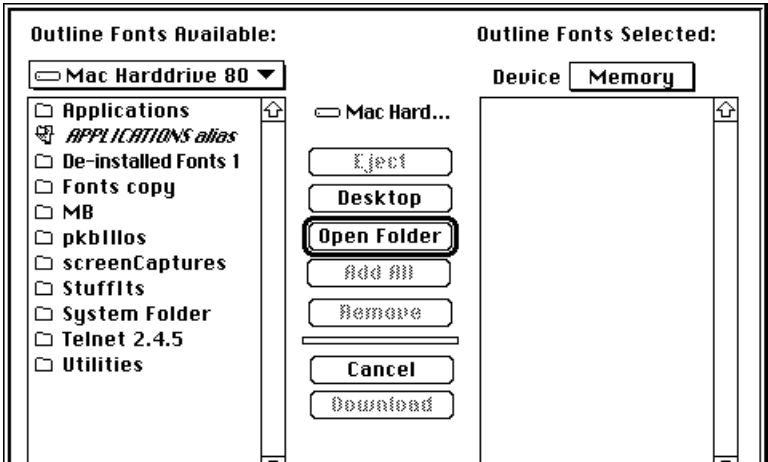
Downloading additional fonts to the hard drive

The steps below describe how to download additional ATM fonts from a Macintosh computer. To download fonts from a Windows system, follow the instructions provided by your font vendor.

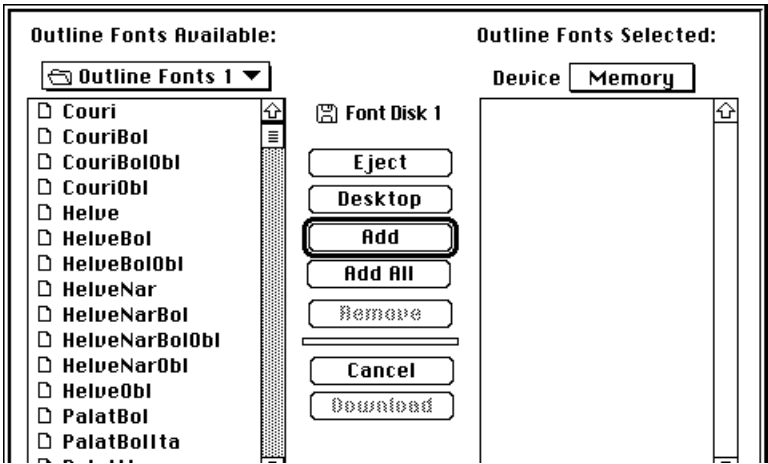
1. Open the Chooser and select the 8650 PS Printer to which the drive is attached.
2. Double-click the Downloader program icon from where it is stored on the ATM diskette or Macintosh hard disk.

NOTE: If you have version 3.8 of ATM, you may need to install it by running the Custom Install procedure and selecting the Downloader so that you can access it from your hard drive. You can't run version 3.8 from diskette.

3. Select *Download Font* from the File menu.
The window below appears.

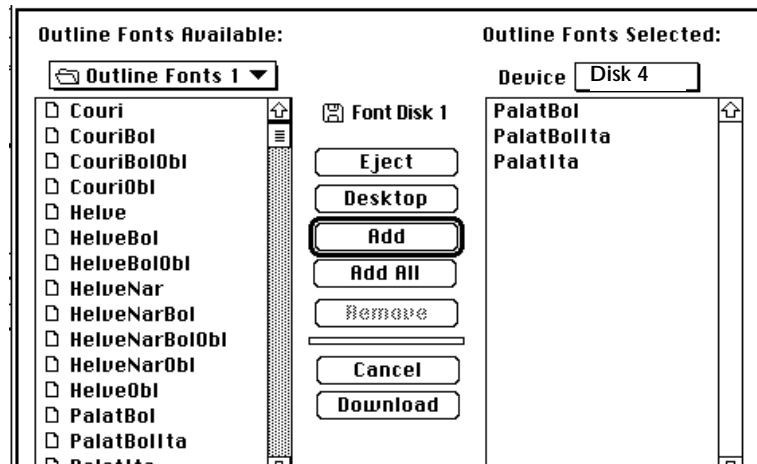


4. If the current disk is not the one with the fonts you wish to download, click *Eject*; and insert the appropriate disk.
5. Open the *Outline Fonts* folder containing the fonts you want to download.



6. Select the font you wish to download from the list on the left side of the window. Then click *Add*. (To add all the fonts, select *Add All*.)
The font name appears in the *Outline Fonts Selected* list.
7. Repeat step 6 for each font you wish to download.

8. Choose "Disk" from the *Device* list box.



9. Click *Download*.

A dialog box listing the font being downloaded and the name of the printer appears. This box remains on screen until all the fonts are downloaded. Then a message appears stating that downloading was successful.

Adding memory to the printer

You can purchase and install SIMMs to increase memory to a total of 64 MB.

NOTE: The *KODAK DIGITAL SCIENCE* 8650 PS / 48 MB / CMYK Color Printer comes with 48 MB of factory-installed memory.

The benefits of having additional memory are as follows:

- You may increase the speed at which images are processed.
- You can download more fonts with PostScript jobs.
- Additional memory allows simultaneous processing and printing of more and/or larger jobs (that is, it increases the possible number of prints per hour). For example, operating in raster mode with 64 MB of memory lets you print one 9 1/2 x 14 job and process a second job of the same size. With less memory, only smaller jobs can be processed and printed.

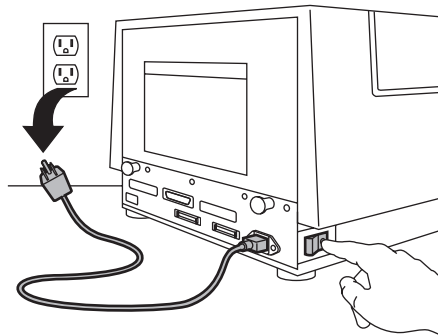
The SIMMs should be 16 MB (in 4MB X 32 bit configuration), 72-pin, symmetrical, 70 nanosecond SIMMs. The following cards fit these specifications:

- Mitsubishi—Part No. MH4M32BNXJ-7
- Toshiba—Part No. THM324000s-70
- Motorola—Part No. MCM32400s70

Preparing to install a SIMM

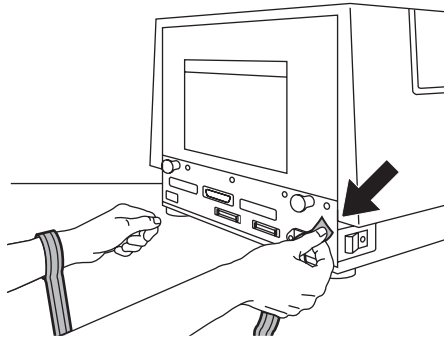
To prepare to install a SIMM.

1. Turn *Off* and unplug the printer.

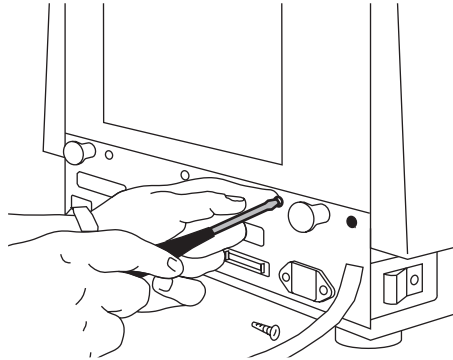


2. Attach the wrist portion of a static strap to your wrist. Attach the other end of the strap to the metal plate on the back of the printer.

CAUTION: Use a grounding strap to prevent static discharge from damaging the printer.

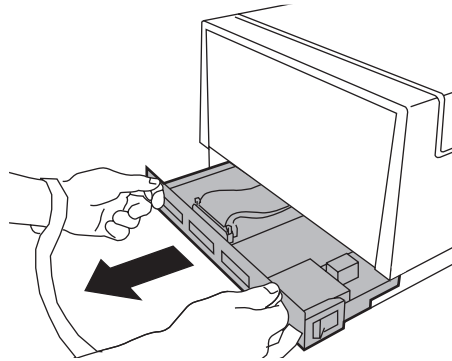


3. Using a Phillips-head screwdriver, remove the five screws on the plate at the lower portion of the back of the printer.

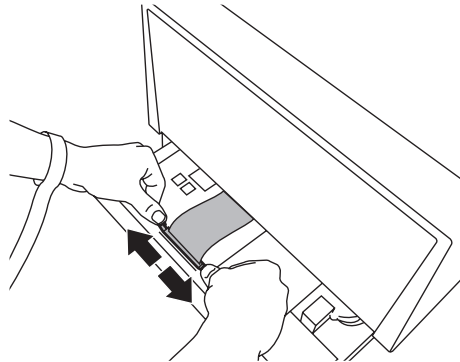


NOTE: There are ten screws on the back of the printer. Remove **ONLY** the five on the lower portion.

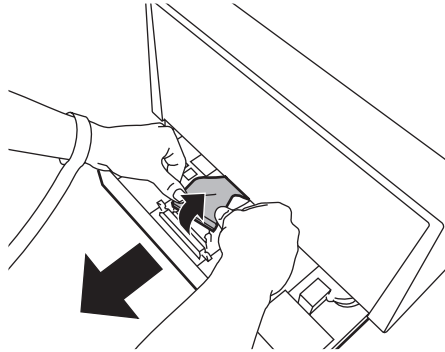
4. Grasp the two black handles on the metal plate and slowly pull the drawer out about three inches.



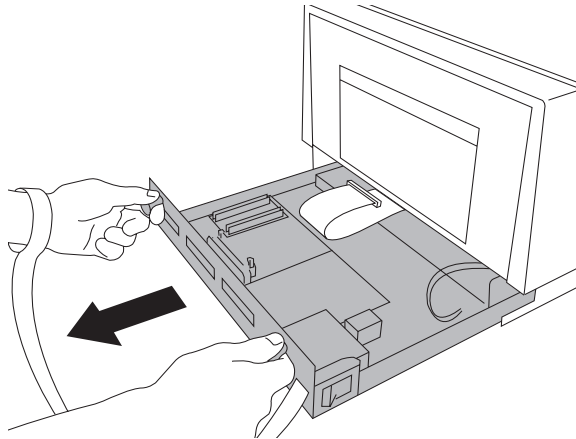
5. Unlatch the ribbon cable in the front center of the drawer by pushing the plastic clips outward.



6. Gently remove the ribbon cable from the socket.



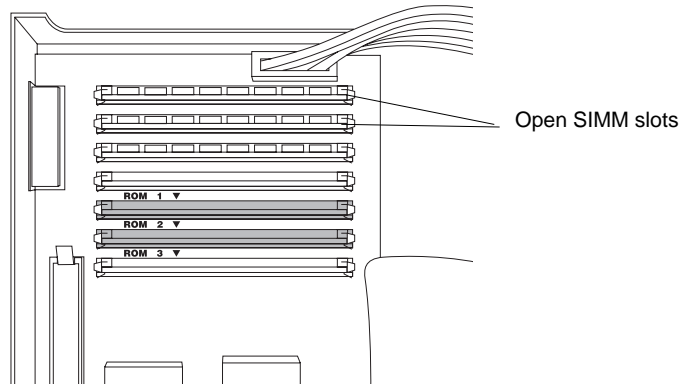
7. Lift the ribbon cable slightly, and slowly pull the drawer out an additional three inches.



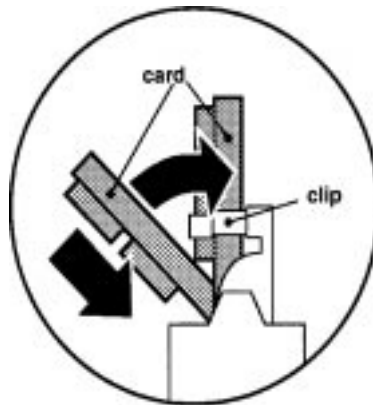
Installing the SIMM card

To install and seat the SIMM.

1. Locate the SIMM receptacles on the left side of the drawer.



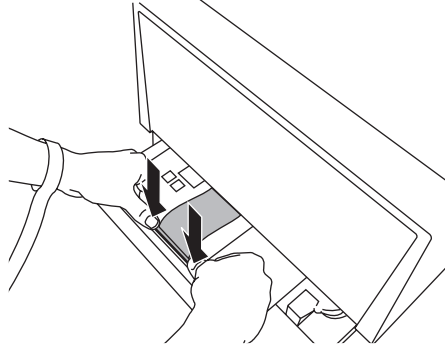
2. Hold the SIMM at a 45° angle and position it in the first empty receptacle next to the other installed cards.
3. Gently tilt the SIMM back so that it is upright and snaps into place in the clips on each side of the receptacle.



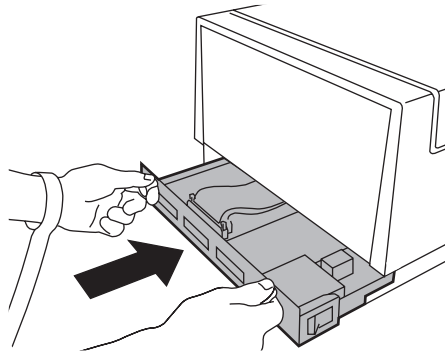
Finishing up

To finish up the installation:

1. Grasp the black handles on the back of the printer and slide the drawer in about three inches.
2. Reconnect the ribbon cable by pressing it firmly into the connector.



3. Make sure that the plastic clips on each side of the ribbon cable are latched.
4. Close the drawer the rest of the way.



5. Replace the five screws that you removed.
6. Plug in the printer and turn it *On*.
7. Verify that the Power light is lit on the display panel.

Index

A

- about other guides ii
- about printer initialization 2-26
- about printer memory 1-1
- about the export modules 1-4
- about the printer 1-1
- about the printer drivers 1-4
- about this guide i
- accessories
 - available B-1
 - ordering B-1
- adding an external hard drive C-2 to C-7
- adding memory to the printer C-8 to C-13
 - finishing up C-13
 - installing a SIMM card C-12
 - preparing to install a SIMM C-8 to C-13
- additional information
 - getting iii
- alcohol cleaning pads
 - ordering B-1
- applications
 - printing from 3-15

B

- barcode 2-9

C

- cables
 - connecting 2-18 to 2-21
- cancel button 3-3
- Centronics connection
 - parallel port 2-18
 - printer modes for 1-3
- changing
 - media settings 2-24
 - media type 2-24
 - operating mode 2-23
 - paper color 2-25
 - printer settings 2-23 to 2-25

- checking and changing printer settings (during printer setup) 2-23 to 2-25
- cleaning pads
 - ordering B-1
- cleaning sensors 4-16
- cleaning the pick rollers 4-14 to 4-16
- cleaning the print head 2-5 to 2-7
- cleaning the printer 3-18
- clearing paper jams 4-11
- clearing the paper path 4-11 to 4-13
- common error messages 4-7
- connecting a LocalTalk cable 2-19
- connecting a parallel cable 2-19
- connecting a SCSI cable 2-20
- connecting the cables 2-18 to 2-21
- connecting the power cord 2-22
- connection types 1-3
- contacting Kodak for help 4-19
- cooling fan 3-18
- curled transparency material 4-10

D

- dimensions A-1
- display panel
 - buttons 3-3
 - indicator lights 3-2
 - items with asterisks 3-6
 - messages 3-2
 - parts 3-2
- downloading fonts to the external hard drive C-5 to C-7
- dust
 - preventing 2-17
- dust cover
 - putting on 2-17

E

- environment for the printer A-2
- error codes
 - machine generated 4-5 to 4-7
- error messages 3-3
 - common 4-7
 - resolving 4-2 to 4-7
- Ethernet ports 2-18
- EtherTalk connections
 - printer modes for 1-3

- export modules available 1-4
- external hard drive
 - adding C-2 to C-7
 - downloading fonts to C-5 to C-7
 - initializing C-3 to C-5
 - installing C-2 to C-3
 - specifying SCSI connection for 3-7

F

- fan 3-18
- finding a location for the printer 2-2
- font disk
 - specifying SCSI connection for 3-7
- fonts 1-5
 - adding a hard disk to allow storage of more C-2
 - downloading to an optional SCSI disk C-2, C-5
 - downloading to the external hard drive C-5 to C-7
 - included with printer 1-5
 - resident on the printer 1-5
- formatting a font disk C-3
- frequency A-2

G

- getting additional information iii
- getting help iii, 4-19
- getting help from Kodak 4-19
- getting the printer ready to ship 4-17
- grounding strap C-9

H

- handles on back of printer C-10, C-13
- handling and storing prints and transparencies 3-17
- handling media 2-12
- handling ribbon 2-8
- help 4-19
 - getting iii
- help numbers for the Asia/Pacific and European regions 4-19
- host interfaces 1-3
- humidity
 - problems caused by 2-13
 - recommended levels 3-17, A-2
- humidity-related paper problems
 - handling 2-12

I

- if the media size does not match the print job 4-8
- if the media type does not match the print job 4-8
- if the printer does not initialize itself 2-26
- if the printer does not start up 2-26
- if the printer is not operating properly 4-9 to 4-10
- if the ribbon does not match the print job 4-8
- image sizes 1-2
 - maximums 1-2
- image stability 3-17
- increasing processing ability C-8
- indicator lights 3-2
- initialization 2-26
- initializing the external hard drive C-3 to C-5
- inserting the shipping pins 4-17
- installing a SIMM card C-12
- installing additional memory C-8
- installing the external hard drive C-2 to C-3
- installing the printer drivers 2-1
- interfaces 1-3
- items included with the printer 2-3

J

- jams
 - paper
 - clearing 4-11 to 4-13
- job scheduling 3-16
- job-related messages 3-3

K

- keeping the printer in good working order 3-19
- Kodak
 - getting help or information 4-19

L

- LaserWriter Font Utility C-4
- lines in prints 4-9
- loading media 2-14 to 2-16
- loading ribbon 2-9
- LocalTalk cable
 - connecting 2-19
- LocalTalk connection
 - printer modes for 1-3
- LocalTalk port 2-18

looking at the display panel 3-2

M

machine generated error codes 4-5 to 4-7

maintaining the printer 3-19

making a test print 2-26

maximum image size 1-2

media 3-8

- loading 2-14 to 2-16

- maximum image size 1-2

- sizes and types 1-2

media *See also* print paper and transparency material

media settings

- changing 2-24

media sizes 1-2

media type

- changing 2-24

media-related messages 3-3

memory

- adding to the printer C-8 to C-13

- different configurations 1-1

messages 3-2, 3-3, 4-11

- error 4-2 to 4-7

mismatches

- handling 4-8

- receiver (media) size 4-8

- receiver (media) type 4-8

- ribbon 4-8

N

Network types 1-3

Novell NetWare connection

- printer modes for 1-3

O

operating mode

- changing 2-23

operating the printer 3-1 to 3-19

ordering accessories B-1

ordering paper B-3

ordering ribbons B-2

ordering supplies B-1

ordering transparency material B-4

other guides

about ii

P

packing the printer 4-17

paper

available B-3

changing color 2-25

humidity problems 2-13

jams 4-2, 4-11

ordering B-3

path, clearing 4-11

storing 2-12

paper and humidity 2-12

paper jams 4-11 to 4-13

paper path

clearing 4-11 to 4-13

paper problems

humidity-related 2-12

paper *See also* print paper

paper trays

ordering B-1

parallel cable

connecting 2-19

parallel connection

printer modes for 1-3

parallel port 2-18

pick rollers

cleaning 4-14 to 4-16

placing the printer 2-2

port information

specifying 3-6, 3-7

ports 2-18

polling method 3-16

specifying information through the display panel 3-6

PostScript mode

specifying the SCSI ID 3-7

PostScript printer

fonts 1-5

power consumption A-2

power cord

connecting the 2-22

power indicator light C-13

power requirements A-2

- preventing dust 2-17
- print button 3-3
- print head
 - cleaning 2-5 to 2-7
- print paper
 - grades available 3-8
 - handling 2-12
 - storing 2-12
 - types, sizes, and image size 3-9 to 3-11
- printer
 - available memory 3-16
 - back plate C-9
 - cover
 - problems opening 4-11
 - description 1-1
 - dimensions A-1
 - installing memory in C-8
 - operating environment A-2
 - packing for shipping 4-17
 - power requirements A-2
 - ribbon cable C-10, C-11
 - space requirements A-1
 - specifications A-1
 - weight A-1
- printer drivers
 - available 1-4
 - installing 2-1
- printer problems
 - image problems 4-9 to 4-10
 - solving 4-9 to 4-10
- printer settings
 - checking and changing during printer setup 2-23 to 2-25
 - entering Setup mode 3-6
 - exiting Setup mode 3-6
 - restoring to factory defaults 3-6
 - scrolling through 3-6
 - selecting an option 3-6
 - working with 3-4, 3-5
- printhead
 - cleaning pads B-1
- printing from computer applications 3-15
- printing time 3-15
- prints

- handling and storing 3-17
- PVC 3-17

R

- raster mode
 - specifying the SCSI ID 3-7
- receivers 3-8
- regulatory information 2
- relative humidity A-2
 - recommended levels A-2
- repacking the printer 4-17
 - shipping the printer 4-17
- requirements
 - power A-2
 - space A-1
- resident fonts 1-5
- resolving error messages 4-2 to 4-7
- restoring printer settings to factory default 3-6
- ribbon 2-8
 - barcode 4-2
 - handling 2-8
 - images remaining on used 2-9, 3-15
 - jam 4-3
 - loading 2-9
 - ordering B-2, B-3
 - storing 2-8
- ribbon cable C-10, C-11, C-13
- ribbons
 - available B-2
 - ordering B-2

S

- scheduling jobs 3-16
- SCSI bus initiator 3-7
- SCSI cable
 - connecting 2-20
- SCSI connection
 - printer modes for 1-3
 - specifying information through the display panel
 - for raster mode 3-7
- SCSI disk
 - installing C-2
 - specifying connection information for 3-7
- SCSI ID

- specifying the 3-7
- SCSI ports 2-18
- selecting a printer setting option 3-6
- sensors
 - cleaning 4-16
- service 4-19
- setting up the printer 2-1
- settings
 - checking and changing during printer setup 2-23 to 2-25
- setup mode 3-3, 3-4, 3-5
 - entering 3-6
 - exiting 3-6
 - restoring settings to factory defaults 3-6
 - scrolling through the settings 3-6
 - selecting an option 3-6
- setup/select button 3-3, 3-6
- shipping pins
 - inserting 4-17
 - removing and setting aside 2-3
- shipping the printer 4-17
- solving printer problems 4-9 to 4-10
- space requirements 2-2, A-1
- specifying port information 3-6
- spots in prints 4-9
- startup 2-26
- static discharge C-9
- status messages 3-2
- storing
 - media 2-12
 - paper 2-12
 - prints and transparencies 3-17
 - ribbon 2-8
- supplies B-1
 - available B-1
 - handling 3-8
 - ordering B-1

T

- TCP/IP connection
 - printer modes for 1-3
- temperature A-2
- terminator C-3
- test print 2-26, 3-3

- thermal head
 - cleaning pads B-1
- thermal paper 3-9 to 3-11
- transparencies
 - handling and storing 3-17
 - storing 3-17
- transparency material
 - available B-4
 - curling 4-10
 - handling 2-12
 - ordering B-4
 - storing 2-12
 - types, sizes, and image size 3-12 to 3-14
- transparency sleeves 3-17
- trays
 - ordering B-1

U

- unpacking the printer 2-3

V

- verifying printer setup and operation 2-27
- voltage A-2

W

- weight A-1
- working in setup mode 3-6
- working with media 2-12 to 2-13
- working with ribbon 2-8 to 2-11
- working with the printer settings 3-4, 3-5

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